2005 South Carolina Energy Statistical Profile

Wood chips that can be processed into biomass fuel for renewable energy generation

Prepared by the South Carolina Energy Office
Division of Insurance and Grants Services
State Budget and Control Board

Foreword

South Carolina is a growing state, and energy use plays a significant role in its economic success. Thus, as our economy has shown rapid growth over the last decade, so too have our energy needs. South Carolina spends nearly $10 billion per year on energy and ranks 18th in the nation in total energy consumption per capita. Per capita energy consumption for South Carolina is 381.5 million Btu, somewhat higher than the overall United States average of 337.7 million Btu.

South Carolinians currently enjoy energy on demand with some of the lowest prices in the nation. Still, the amount of money spent on energy is an important decision faced by South Carolinians every day, and will become even more important as we address public policy issues such as the sky-rocketing price of global petroleum products due to foreign crises, the uncertain future of utility deregulation, and the need for sustainable development and environmental protection.

If we are to continue to have a safe, viable, and environmentally sound energy future in South Carolina, policy makers and citizens alike must have access to the best possible information to make informed decisions. The *2005 South Carolina Energy Statistical Profile* provides the latest available information on energy consumption, prices and expenditures, and energy use trends for the state of South Carolina. The information is presented in brief summaries, tables, and graphs in order to provide comparisons among different fuel types and economic sectors, and to show how South Carolina fares in relation to the rest of the United States. Because of the integral relationship among the economy, the environment, and energy, it is essential to provide objective energy statistics to assist in shaping not only South Carolina's energy policy, but also its environmental and economic policies.

The majority of data used in the *South Carolina Energy Statistical Profile* is compiled from publications and raw databases provided by the Energy Information Administration (EIA) with the U.S. Department of Energy. Due to the vast amount of data analyzed by the EIA, available information generally lags several years behind, particularly with regards to data for total energy consumption and expenditures. Consequently, total energy consumption and expenditures data is current through 2001, while data for specific sections on electricity, petroleum, natural gas, coal, and renewable energy is current through 2003 and 2004.

In addition to the U.S. Department of Energy, the South Carolina Energy Office depends on many other agencies and organizations for the data used in this report. They include the U.S. Department of Commerce, the Edison Electric Institute, the Federal Highway Administration, the American Petroleum Institute, the U.S. Department of Agriculture, the U.S. Environmental Protection Agency, South Carolina Electric and Gas Company, the Carolinas' Chapter of the American Automobile Association, the South Carolina Public Service Commission, the South Carolina Department of Revenue, and the research activities of South Carolina Energy Office staff. We include the most recent years for which data is available, and it varies from source to source.

Table of Contents

List of Tables

Section 1: Total Energy Data

Section 2: Electricity

Section 3: Petroleum

Section 4: Natural Gas

Section 5: Coal

Section 6: Nuclear

Section 7: Renewable Energy

Appendix

List of Figures

Section 1: Total Energy Data

Section 2: Electricity

Section 3: Petroleum

Section 4: Natural Gas

Section 5: Coal

Section 6: Nuclear

Section 7: Renewable Energy

Executive Summary

The *2005 South Carolina Energy Statistical Profile* is a detailed and comprehensive source of the latest available information on energy consumption, prices, expenditures, and sources of supply. Since energy plays an increasingly critical role in the economy and everyday lives of all South Carolinians, energy trends and patterns presented in this profile may serve as a useful interpretative tool for state policy makers, educational institutions, and the general public.

The mission of the South Carolina Energy Office (SCEO) is to increase efficiency in the use of all energy resources in all consuming sectors of the state, and, to the extent practical, to maximize environmental quality and to minimize the cost of energy use. Within this context, the *South Carolina Energy Statistical Profile* is designed to serve not only as a basis to analyze South Carolina-specific energy trends and activities, but also as a valuable tool for resource planning.

All efforts have been made to ensure that the information provided in this profile is compiled from the best available sources in the public domain. A large portion of the data in this profile is derived from the most detailed and complete source of United States and state-level energy data, the *State Energy Consumption and Price and Expenditure* database files, made available by the Energy Information Administration of the U.S. Department of Energy. As can be expected, it is a time-consuming task for the Energy Information Administration to collect and publish such detailed energy data from all fifty states. Consequently, the energy information included in these database files is three to four years behind in being publicly available.

In 2001, South Carolinians spent $9.9 billion in energy expenditures (ranked 26th in nation), $309 million (3 percent) less than the amount spent in 2000. This is equivalent to $2,430 per person in South Carolina (28th in the nation). With a per capita personal income of $24,840, this presents a substantial economic impact on the South Carolina populace.

South Carolina ranked 27th in petroleum expenditures, 34th in natural gas expenditures, 16th in coal expenditures, and 20th in electricity expenditures. South Carolina ranks 18th in total energy consumption per capita, using more energy per person than 31 other states, plus the District of Columbia. The transportation sector accounted for 38.5 percent of the expenditures.

In the residential sector, South Carolina ranks 18th in energy consumption per capita. Our state ranks 40th in commercial sector consumption per capita, 14th in industrial sector consumption per capita, and 26th in transportation sector consumption per capita.

When broken down by fuel source, South Carolina ranks 1st in the nation in nuclear energy consumption per capita; 44th in the nation in natural gas consumption per capita; 39th in petroleum consumption per capita; 18th in coal consumption per capita, and 3rd in electricity consumption per capita.

In order to provide a snapshot of the overall context of energy consumption performance in South Carolina as compared to the United States as a whole, two measurements of energy efficiency are provided in this summary. The first involves

energy efficiency as measured in terms of energy consumption per dollar of gross state product. In this particular area South Carolina has made significant progress over the last two years. Since 1990, the economy has grown slightly faster than energy consumption, resulting in a 32.7 percent decrease (from 19,558 to 13,153) in Btu consumed per dollar of economic output (gross state product, adjusted for inflation). Nevertheless, South Carolina's energy efficiency trails behind the national average of 9,597 Btu per dollar of gross domestic product, which is 27 percent lower than South Carolina's energy efficiency index. South Carolina is ranked 17th highest in the nation for energy use per dollar of GDP.

A second measure of energy efficiency is per capita energy use. As noted previously, South Carolina ranks 18th in total energy consumption per capita. However, South Carolina's energy consumption per capita is showing signs of leveling off after increasing more rapidly than the nation's average during most of the 1990s. South Carolina saw an 11.5 percent increase in energy consumption per capita between 1990 and 2001, while the United States per capita rate rose only 3.5 percent. South Carolina's total energy use increased 21.1 percent between 1990 and 2001, while its population grew by 16 percent over the same period.

Electricity

Electricity generation in South Carolina has increased by 106 percent over the past 20 years. In 2003, power plants produced over 94 billion kilowatthours of electricity in South Carolina, with the residential sector accounting for 35 percent of total sales in 2004. Fifty-eight percent of South Carolina households use electricity as their primary fuel source. While the average residential electric rate in South Carolina is quite lower than the national average for investor-owned utilities, the average annual residential electric bill is nearly $270 more than the U.S. average. South Carolina also has the 5th highest residential monthly electric bill in the nation with an average of $94.95.

In 2003, there were 77 power plants operating in South Carolina with a total rating capacity of 22,252.9 megawatts. Emissions from steam-electric generation units have been steadily increasing, with carbon dioxide from coal-fired plant plants accounting for 99 percent of total emissions.

Petroleum

The transportation sector accounted for 81.2 percent of all petroleum use in South Carolina in 2001. In 2003, 2,918,957 licensed South Carolina drivers with 3.2 million registered vehicles drove 43 billion miles, while consuming 2.4 billion gallons of gasoline. South Carolina's fuel consumption trend is similar to that of the rest of the nation, but continues to substantially exceed the national average on a per capita basis. Gasoline prices in South Carolina have been historically lower than the national average.

Natural Gas

Deliveries of natural gas to end-use customers in South Carolina were 34.2 percent higher in 2004 compared to 1980. Most of the increase occurred in the industrial sector, where deliveries increased by 18.5 percent, and accounted for 51.8 percent of all natural gas deliveries.

Since only 26.2 percent of South Carolina households use natural gas as a fuel source for heating, the price has been historically higher than the national average. South Carolina natural gas prices rose by $5.84 per thousand cubic feet from 1984 to 2004 in the residential sector, as compared with $4.62 for the U.S. average.

Also, in the residential sector, the number of customers increased by 42.2 percent from 1982 to 2002, and the average consumption per customer decreased by 12.7 percent.

Coal

Coal use has increased by 79 percent (7,420,000 tons) over the past 20 years in South Carolina, with electric utilities accounting for 88 percent of all coal consumed and the industrial sector making up the remaining 12 percent. The average cost per short ton of coal delivered to electric utilities in South Carolina in 2003 was $40.91. The Winyah and Cross plants, operated by Santee Cooper, the state-owned utility power provider, accounted for the greatest coal receipts of all electric plants in South Carolina.

Nuclear

With seven nuclear reactors, South Carolina is the third largest generator of nuclear electricity in the U.S. These reactors accounted for 52.7 percent of the total electricity generation in 2004, as compared with 20 percent on the nation level. Of the nine southeastern states that have nuclear power, South Carolina is the only one in which nuclear power is the leading fuel in the electricity market.

South Carolina is also heavily involved in the disposal of nuclear waste. The Barnwell low-level radioactive waste disposal site accepts only Class B and Class C low-level radioactive waste from across the nation. After June 2008, the Barnwell facility will only accept this type of waste from the three-state Atlantic Compact region, which includes South Carolina, New Jersey, and Connecticut.

The Savannah River Site (SRS) is a key U.S. Department of Energy complex, which was built in the early 1950's to build the basic materials used in making nuclear weapons for our nation's defense. Since the end of the Cold War, the site has been the center for the supply of tritium for the nation's nuclear stockpile and is also involved in commercial research and development.

Renewable Energy

Total renewable energy net power generation decreased by 43 percent from 1990 to 2002 in South Carolina, largely because of drought conditions that caused hydroelectric generation to fall by 57.9 percent. Electricity generation by wood waste solid fuels is the most consistent form of renewable electric power, but it decreased by 7 percent during this period. Renewable power generation as a percentage of total South Carolina generation declined from 6.7 percent in 1990 to 2.7 percent in 2002.

The South Carolina Energy Office has developed its own solar/PV energy database, which shows there are 106 operational solar energy systems, with 91 in the residential sector, 14 in the commercial sector, and 1 in the agriculture sector. Another Energy Office renewable energy database details facilities that utilize renewable biomass for combustion for steam and electricity generation. Landfill gas facilities are the fastest growing segment of biomass energy producers.

In response to the tenuous and volatile global energy situation, high petroleum prices, and limited fossil fuel supplies and reserves, South Carolina is making a concerted effort to focus on renewable energy programs that are both economically and environmentally feasible.

Ethanol, biodiesel and compressed natural gas are the chief alternative transportation fuels. From 1998 to 2003, the number of alternative-fueled vehicles (AFVs) in use in South Carolina increased by 102.3%. This

rate of growth is significantly higher than the surrounding states of North Carolina, Georgia, Tennessee, and Florida.

Although there are currently no incentives for alternative fuels or alternative-fueled vehicles in South Carolina, the growth potential for alternative-fueled vehicle use and technology is strong.

The 2005 South Carolina Energy Statistical Profile is a detailed and comprehensive source of the latest available information on energy consumption, prices, expenditures, sources of supply, and the role of renewable energy technology in South Carolina. This edition builds on over seven years of continuous energy data collection and analysis by the South Carolina Energy Office. The purpose of this publication is to provide a better understanding of the patterns and trends of energy use in South Carolina, and thereby promote efficiency and offer guidance for economic and environmental policy and planning.

SECTION 1: TOTAL ENERGY DATA

Total energy consumption in South Carolina increased by 107% from 1970 to 2001, while energy consumption in the United States rose by only 41.8% during the same period. Most of the increase in South Carolina occurred in the nuclear sector, where energy consumption rose by 192.3% from 1980 to 2001. In 2001, nuclear energy accounted for 32.2% of the state's energy consumption as compared with only 8.3% on the national level. On a comparative level, South Carolina ranked 21st in the nation in coal consumption, 38th in natural gas consumption, 27th in petroleum consumption, and 17th in electricity consumption in 2001. Overall, South Carolina ranked 22nd in total energy consumption in the nation.

Table 1.1

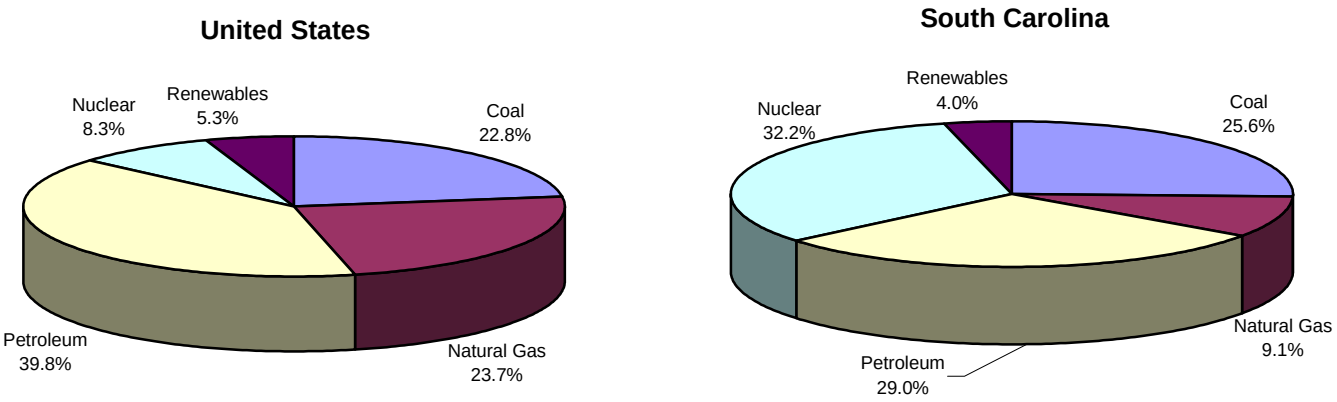
South Carolina Annual Energy Consumption by Type of Fuel
1970-2001
(Trillion Btu and Percent of Total)

Year	Coal		Natural Gas		Petroleum		Nuclear		Renewables*		Net Total	Total Resource[1]
1970	140.1	18.7%	164.3	22.0%	302.2	40.4%	0.1	0.0%	24.1	3.2%	630.8	747.8
1975	140.2	16.6%	125.9	14.9%	340.5	40.3%	214.3	25.3%	45.9	5.4%	866.8	845.4
1980	245.8	24.3%	146.9	14.5%	365.8	36.1%	189.8	18.7%	31.4	3.1%	979.7	1012.6
1981	266.5	27.0%	145.2	14.7%	349.3	35.4%	191.1	19.4%	32.3	3.3%	984.4	985.7
1982	271.5	28.7%	101.0	10.7%	322.0	34.0%	145.7	15.4%	25.4	2.7%	865.6	946.6
1983	233.9	23.9%	104.4	10.6%	334.6	34.1%	279.0	28.5%	32.6	3.3%	984.5	980.3
1984	244.0	23.6%	111.2	10.7%	353.4	34.1%	251.9	24.3%	33.2	3.2%	993.7	1,035.0
1985	262.7	24.0%	100.2	9.2%	354.4	32.4%	344.1	31.5%	50.4	4.6%	1,111.8	1,092.5
1986	263.9	22.7%	101.5	8.7%	364.0	31.3%	384.7	33.1%	88.9	7.6%	1,203.0	1,163.3
1987	295.3	24.6%	108.6	9.1%	373.4	31.1%	423.4	35.3%	96.3	8.0%	1,297.0	1,199.3
1988	301.8	24.1%	115.3	9.2%	381.9	30.4%	437.7	34.9%	83.3	6.6%	1,320.0	1,254.5
1989	301.5	24.1%	119.9	9.6%	397.5	31.8%	437.3	35.0%	100.7	8.1%	1,356.9	1,249.4
1990	289.3	22.6%	134.1	10.5%	405.5	31.7%	458.0	35.8%	111.9	8.7%	1,398.8	1,279.2
1991	290.9	22.3%	137.4	10.5%	420.5	32.2%	463.0	35.5%	109.5	8.4%	1,421.3	1,304.9
1992	288.3	21.8%	141.8	10.7%	415.4	31.5%	486.2	36.8%	113.3	8.6%	1,445.0	1,319.7
1993	328.5	23.9%	145.6	10.6%	428.7	31.2%	493.4	35.9%	113.2	8.2%	1,509.4	1,373.6
1994	330.7	24.2%	149.0	10.9%	427.2	31.3%	474.7	34.8%	111.1	8.1%	1,492.7	1,365.1
1995	314.5	22.4%	156.0	11.1%	433.7	30.9%	524.1	37.3%	111.2	7.9%	1,539.5	1,405.0
1996	352.5	24.6%	154.1	10.8%	416.8	29.1%	462.9	32.3%	131.0	9.1%	1,517.3	1,432.4
1997	361.6	23.0%	158.7	10.1%	446.7	28.4%	477.1	30.3%	129.5	8.2%	1,573.6	1,479.1
1998	374.0	23.1%	162.0	10.0%	462.1	28.5%	518.0	32.0%	102.7	6.3%	1,618.8	1,497.6
1999	402.6	24.3%	162.5	9.8%	466.9	28.1%	539.8	32.5%	87.5	5.3%	1,659.3	1,493.0
2000	432.2	25.6%	159.6	9.5%	481.1	28.5%	530.7	31.4%	84.2	5.0%	1,687.8	1,477.1
2001	414.4	25.6%	147.2	9.1%	469.5	29.0%	521.0	32.2%	64.9	4.0%	1,617.0	1,548.2

[1]Includes energy resources (and losses) accountable to electricity generation, transmission, and distribution.
*Renewables includes solar, wind, wood, biogas, bio solid waste and hydroelectric.
Source: Energy Information Administration, *State Energy Data*.

Figure 1.1

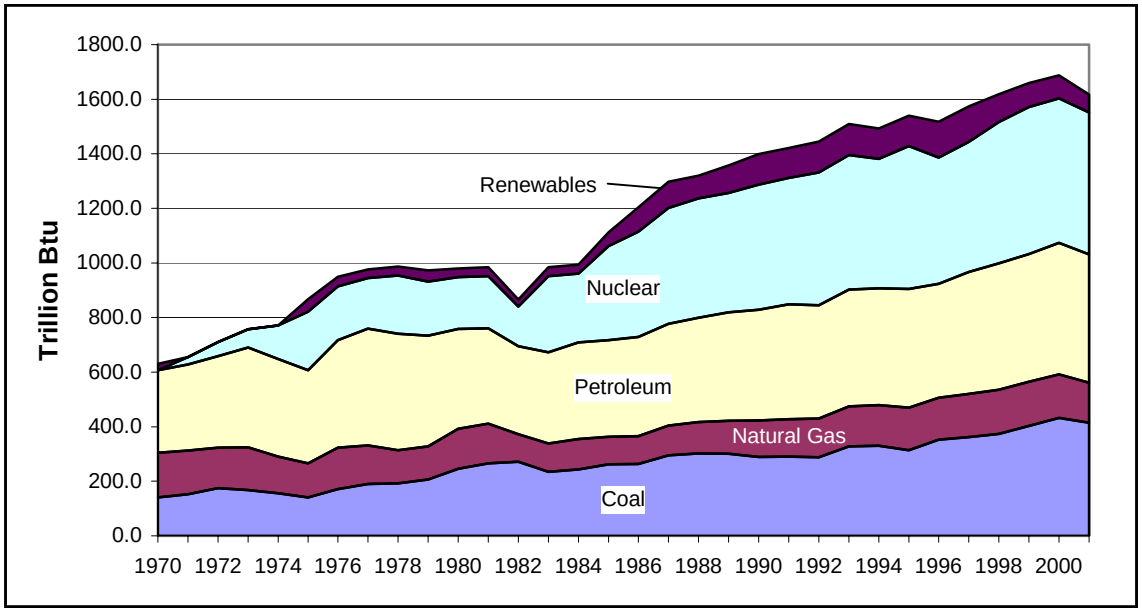
Comparison of U.S. and South Carolina Energy Consumption by Fuel Source, 2001



Source: Energy Information Administration, *State Energy Data*.

Figure 1.2

South Carolina Energy Consumption by Type of Fuel, 1970-2001



Source: Energy Information Administration, *State Energy Data*.

Energy Consumption by Economic Sector

From 1970 to 2001, energy consumption in the South Carolina residential sector increased by 115.6% as compared with 47.6% for the U.S.; commercial sector energy use increased by 214.3% while the U.S. saw a 107.7% increase; industrial sector consumption increased by 87.4% as compared with a 9.5% increase in the U.S.; and the transportation sector saw an increase of 92.7% as compared with 63.2% for the nation. In 2001, the South Carolina industrial sector accounted for 39.3% of energy consumption, followed by the transportation sector with 24.7%, the residential sector with 20.8%, and the commercial sector with 15.2%. This closely conforms to the national trend in end-use sector consumption.

Table 1.2

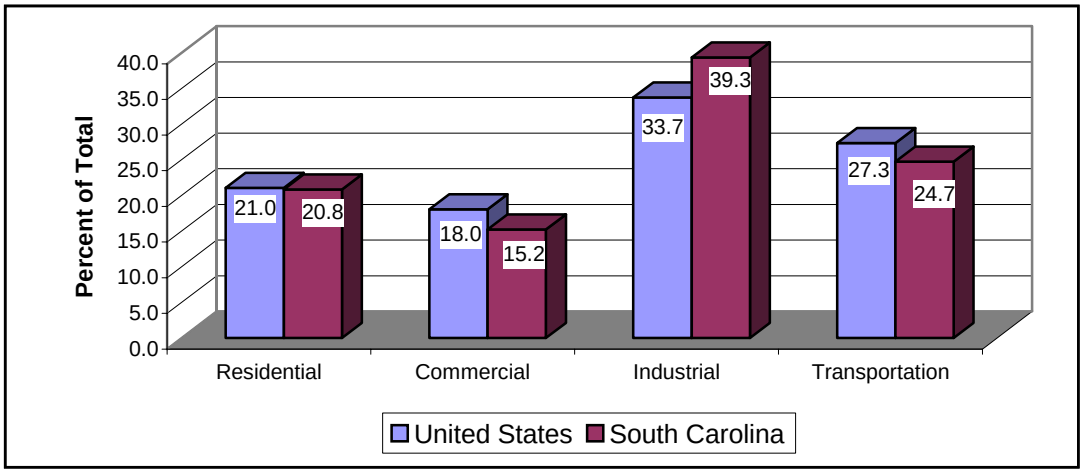
South Carolina Annual Energy Consumption by Economic Sector, 1970-2001
(Trillion Btu and Percent of Total)

Year	Residential		Commercial		Industrial		Transportation		TOTAL[1]
1970	149.2	20.0%	74.9	10.0%	325.1	43.5%	198.6	26.6%	747.8
1975	166.2	19.7%	110.8	13.1%	338.9	40.1%	229.4	27.1%	845.4
1980	198.3	19.6%	134.3	13.3%	431.9	42.7%	248.1	24.5%	1,012.6
1981	188.3	19.1%	124.2	12.6%	427.0	43.3%	246.2	25.0%	985.7
1982	190.0	20.1%	129.0	13.6%	381.4	40.3%	246.2	26.0%	946.6
1983	192.6	19.7%	135.5	13.9%	396.7	40.6%	252.0	25.8%	976.8
1984	200.9	19.4%	131.2	12.7%	437.3	42.3%	265.6	25.7%	1,035.0
1985	218.2	20.0%	136.9	12.5%	472.4	43.2%	265.0	24.3%	1,092.5
1986	232.6	20.0%	145.2	12.5%	510.2	43.9%	275.3	23.7%	1,163.3
1987	243.8	20.3%	151.3	12.6%	536.4	44.6%	270.5	22.5%	1,202.0
1988	245.4	19.6%	157.3	12.5%	554.1	44.2%	297.7	23.7%	1,254.5
1989	247.9	19.8%	159.7	12.8%	551.5	44.1%	290.3	23.2%	1,249.4
1990	240.5	18.8%	160.6	12.6%	567.9	44.4%	310.1	24.2%	1,279.1
1991	248.3	19.0%	163.1	12.5%	577.6	44.3%	315.9	24.2%	1,304.9
1992	248.7	18.8%	165.0	12.5%	597.9	45.3%	308.2	23.4%	1,319.8
1993	271.5	19.8%	175.2	12.8%	612.0	44.6%	315.0	22.9%	1,373.7
1994	257.7	18.8%	175.6	12.8%	615.2	44.9%	321.6	23.5%	1,370.1
1995	275.7	19.6%	184.4	13.1%	622.9	44.3%	322.0	22.9%	1,405.0
1996	292.1	20.4%	191.5	13.4%	620.3	43.3%	328.5	22.9%	1,432.4
1997	274.9	18.6%	193.3	13.1%	667.7	45.1%	343.2	23.2%	1,479.1
1998	292.2	19.5%	213.1	14.2%	628.4	42.0%	363.8	24.3%	1,497.5
1999	288.1	19.3%	210.3	14.1%	618.2	41.4%	376.4	25.2%	1,493.0
2000	285.3	19.3%	200.9	13.6%	607.6	41.1%	383.2	25.9%	1,477.1
2001	321.7	20.8%	235.4	15.2%	609.1	39.3%	382.7	24.7%	1548.8

[1]Includes energy resources (and losses) accountable to electricity generation, transmission, and distribution.
Source: Energy Information Administration, *State Energy Data*.

Figure 1.3

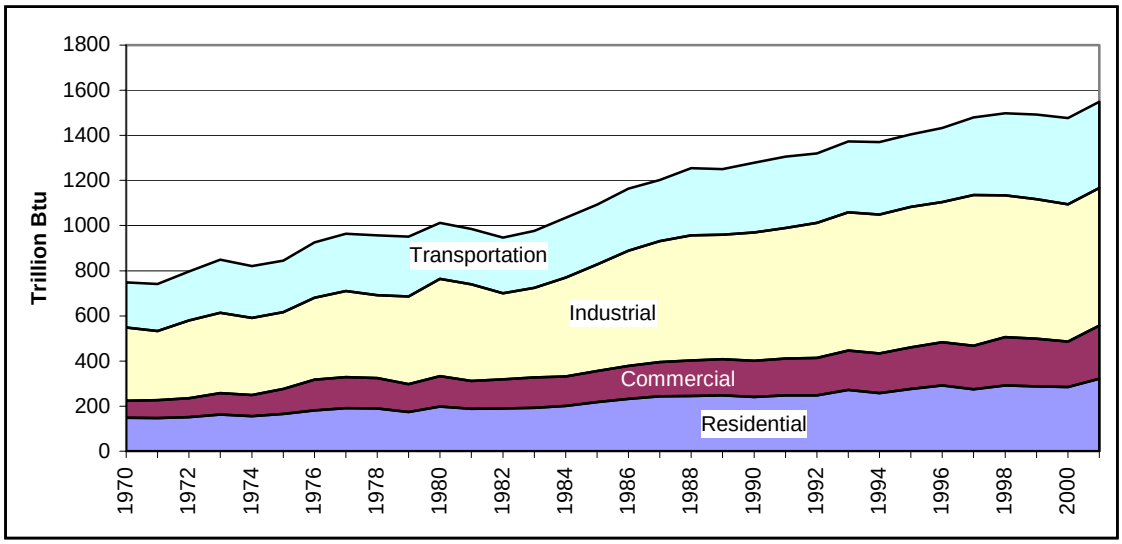
2001 U.S. and South Carolina Energy Consumption Estimates by Economic Sector



Source: Energy Information Administration, *State Energy Data*.

Figure 1.4

South Carolina Energy Consumption Estimates by Economic Sector, 1970-2001



Source: Energy Information Administration, *State Energy Data*.

Residential Energy Consumption

South Carolina residential end-use energy consumption increased by 130.8% from 1970-2001, while the United States saw an increase of only 47.6% during the same period. Electricity accounts for the majority of residential energy consumption in South Carolina (65%), but accounts for only 37.3% on the national level. Residential natural gas use in South Carolina accounts for 21.8% of energy consumption. On the other hand, natural gas consumption accounts for 44.6% of residential energy consumption in the United States. Petroleum comprises 8.2% of residential energy consumption in South Carolina and 14% on the national level. Renewable energy consumption in South Carolina (5%) is above the U.S. average of 4%. South Carolina ranked 25th in the nation in total energy consumption in the residential sector in 2001. It should be noted that propane is included in natural gas usage.

Table 1.3

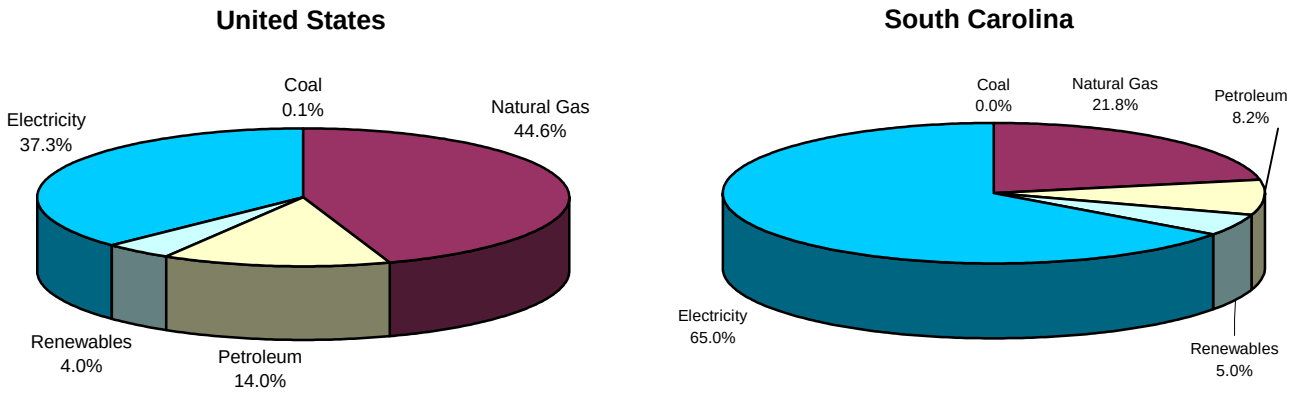
South Carolina Residential Energy Use Estimates by Type of Fuel
1970-2001
(Trillions of Btu and Percent of Total)

Year	Coal		Natural Gas		Petroleum		Renewables**		Electricity		Net Energy Use	Total[1]
1970	2.0	2.5%	19.5	24.8%	32.1	40.8%	0.0	0.0%	25.1	31.9%	78.7	139.4
1975	2.0	2.3%	18.6	21.8%	21.2	24.9%	9.8	11.5%	33.6	39.4%	85.2	166.2
1980	1.7	1.8%	19.5	20.7%	21.6	23.0%	8.3	8.8%	42.9	45.6%	94.0	198.3
1981	0.9	1.1%	19.4	23.7%	17.1	20.9%	N/A	0.0%	44.6	54.4%	82.0	188.3
1982	1.0	1.3%	18.1	22.8%	14.3	18.0%	N/A	0.0%	46.0	57.9%	79.4	190.0
1983	1.5	1.8%	19.2	23.1%	15.3	18.4%	N/A	0.0%	47.1	56.7%	83.1	196.2
1984	1.0	1.2%	19.7	23.1%	14.8	17.4%	N/A	0.0%	49.7	58.3%	85.2	200.9
1985	0.6	0.6%	16.9	16.8%	20.3	20.2%	12.9	12.8%	50.0	49.7%	100.7	218.2
1986	1.9	1.8%	18.0	17.0%	18.6	17.5%	12.6	11.9%	55.0	51.8%	106.1	232.6
1987	1.1	1.0%	20.8	18.6%	21.9	19.6%	10.5	9.4%	57.7	51.5%	112.0	243.8
1988	1.1	1.0%	21.3	18.9%	21.0	18.6%	10.9	9.7%	58.6	51.9%	112.9	245.4
1989	0.2	0.2%	21.0	18.4%	21.9	19.2%	11.3	9.9%	59.6	52.3%	114.0	247.9
1990	0.1	0.1%	18.9	18.1%	15.1	14.5%	7.9	7.6%	62.3	59.7%	104.3	240.5
1991	0.2	0.2%	20.1	18.4%	17.1	15.6%	8.3	7.6%	63.8	58.3%	109.5	248.3
1992	0.3	0.3%	23.0	20.8%	14.2	12.8%	8.7	7.9%	64.6	58.3%	110.8	248.7
1993	1.0	0.8%	25.1	20.5%	16.2	13.2%	9.5	7.8%	70.6	57.7%	122.4	271.5
1994	0.6	0.5%	24.2	20.9%	13.9	12.0%	9.3	8.0%	67.9	58.6%	115.9	257.7
1995	0.2	0.2%	25.8	20.9%	14.2	11.5%	10.3	8.3%	73.0	59.1%	123.5	275.7
1996	0.2	0.2%	30.3	23.0%	14.4	10.9%	10.3	7.8%	76.8	58.2%	132.0	292.1
1997	*	N/A	26.5	21.8%	13.9	11.4%	7.4	6.1%	73.7	60.7%	121.5	274.9
1998	0.2	0.2%	26.3	20.9%	12.8	10.2%	6.5	5.2%	80.4	63.8%	126.0	292.2
1999	2.0	1.6%	26.5	20.8%	13.2	10.3%	7.0	5.5%	80.9	63.4%	127.6	288.1
2000	0.0	0.0%	29.9	21.7%	13.9	10.1%	7.5	5.5%	86.2	62.7%	137.5	285.3
2001	0.0	0.0%	28.5	21.8%	10.7	8.2%	6.5	5.0%	84.9	65.0%	130.6	321.7

[1]Includes energy resources (and losses) accountable to electricity generation, transmission, and distribution.
*Btu value less than 0.05 and physical unit value less than 0.5.
**Renewables include solar, wood, biogas, bio solid waste and hydroelectric.
Source: Energy Information Administration, *State Energy Data*.

Figure 1.5

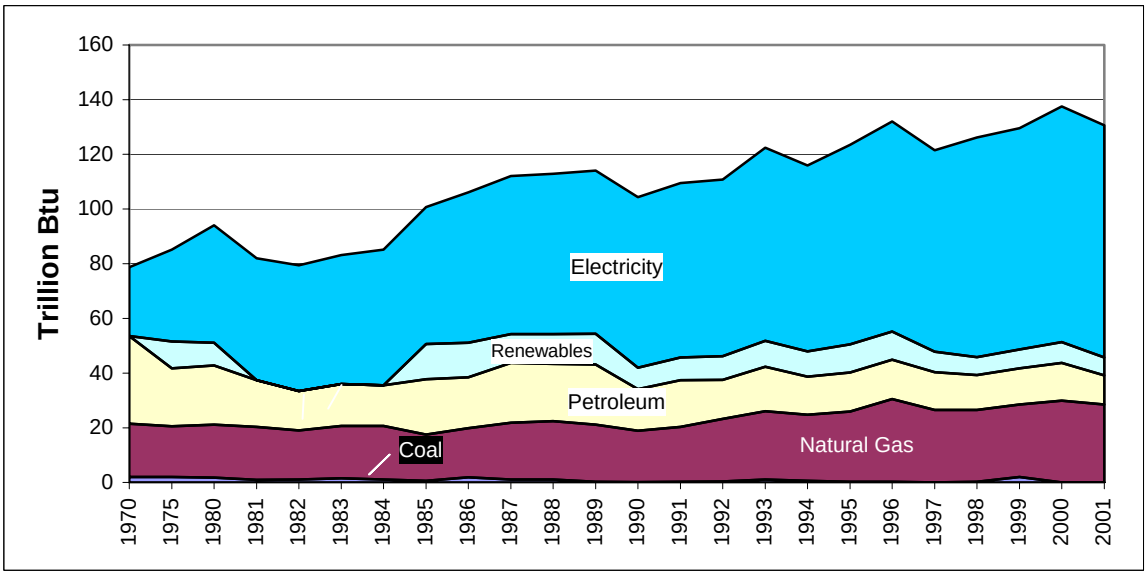
Comparison of U.S. and South Carolina Residential Energy Consumption, 2001



Source: Energy Information Administration, *State Energy Data.*

Figure 1.6

South Carolina Residential Energy Consumption, 1970-2001



Source: Energy Information Administration, *State Energy Data*.

South Carolina Commercial Sector Energy Consumption

South Carolina energy consumption in the commercial sector increased 214.3% from 1970 to 2001. In 2001, electricity accounted for 66.9% of end-use energy consumption in the South Carolina commercial sector, as compared with 50.2% in the United States. Natural gas makes up 22.9% of the commercial energy consumption in South Carolina, while the United States is higher with 38.4%. Petroleum accounts for 7.2% of commercial energy consumption in South Carolina and 9.1% in the United States. Percentage wise, South Carolina consumes more renewable energy (3%) than the national average (1.1%). South Carolina ranks 26th in the nation in energy consumption in the commercial sector.

Table 1.4

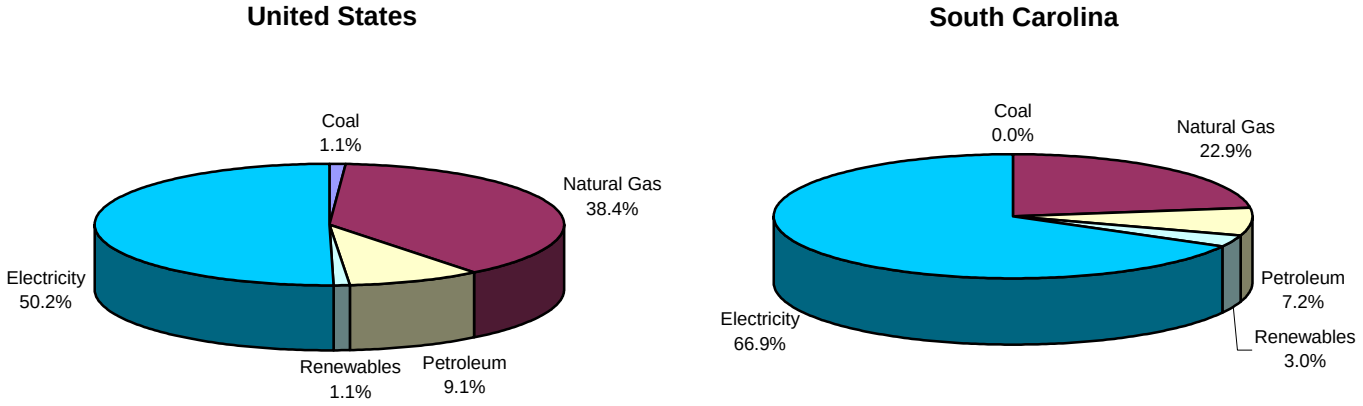
South Carolina Commercial Energy Use Estimates by Type of Fuel
1970-2001
(Trillion Btu and Percent of Total)

Year	Coal		Natural Gas		Petroleum		Renewables**		Electricity		Net Energy Use	Total[1]
1970	3.8	9.5%	14.2	35.6%	7.2	18.0%	0.2	0.5%	14.5	36.3%	39.9	74.9
1975	3.7	7.1%	17.6	33.7%	6.4	12.3%	0.2	0.4%	24.3	46.6%	52.2	110.8
1980	3.1	5.0%	23.6	38.1%	5.4	8.7%	0.2	0.3%	29.7	47.9%	62.0	134.3
1981	1.6	2.9%	19.9	35.6%	5.7	10.2%	N/A	0.0%	28.7	51.3%	55.9	124.2
1982	1.9	3.5%	16.0	29.7%	4.8	8.9%	N/A	0.0%	31.2	57.9%	53.9	129.0
1983	2.8	4.7%	17.0	28.6%	8.0	13.4%	N/A	0.0%	31.7	53.3%	59.5	135.5
1984	1.8	3.1%	17.1	29.4%	7.8	13.4%	N/A	0.0%	31.4	54.0%	58.1	131.2
1985	1.1	1.9%	15.7	26.9%	8.1	13.9%	N/A	0.0%	33.4	57.3%	58.3	136.6
1986	3.6	5.7%	16.4	26.2%	6.9	11.0%	N/A	0.0%	35.8	57.1%	62.7	145.2
1987	2.0	3.1%	17.7	27.1%	8.1	12.4%	N/A	0.0%	37.6	57.5%	65.4	151.3
1988	2.1	3.1%	17.9	26.2%	9.1	13.3%	N/A	0.0%	39.3	57.5%	68.4	157.3
1989	0.3	0.4%	17.0	25.3%	8.5	12.7%	N/A	0.0%	41.3	61.5%	67.1	159.7
1990	0.1	0.2%	15.8	24.2%	6.1	9.3%	N/A	0.0%	43.3	66.3%	65.3	160.1
1991	0.4	0.6%	16.2	24.5%	5.1	7.7%	N/A	0.0%	44.4	67.2%	66.1	162.7
1992	0.5	0.7%	17.1	24.9%	6.2	9.0%	N/A	0.0%	44.9	65.4%	68.7	164.6
1993	1.7	2.3%	17.5	23.5%	6.8	9.1%	0.8	1.1%	47.7	64.0%	74.5	175.2
1994	0.9	1.2%	18.4	24.7%	5.9	7.9%	0.8	1.1%	48.4	65.1%	74.4	175.6
1995	0.3	0.4%	19.4	24.6%	7.6	9.6%	0.8	1.0%	50.7	64.3%	78.8	184.4
1996	0.3	0.4%	20.9	25.5%	7.5	9.1%	0.8	1.0%	52.5	64.0%	82.0	191.5
1997	*	0.0%	20.2	24.5%	7.9	9.6%	0.8	1.0%	53.4	64.9%	82.3	193.3
1998	0.4	0.4%	20.5	22.5%	10.6	11.6%	0.8	0.9%	59.0	64.6%	91.3	213.1
1999	3.8	4.1%	21.2	22.7%	7.8	8.3%	1.0	1.1%	59.7	63.9%	93.5	210.3
2000	0.0	0.0%	22.7	24.4%	6.5	7.0%	0.9	1.0%	62.9	67.6%	93.0	200.9
2001	0.0	0.0%	21.5	22.9%	6.6	7.2%	2.8	3.0%	62.9	66.9%	93.8	235.4

[1]Includes energy resources (and losses) accountable to electricity generation, transmission, and distribution.
*Btu value less than 0.05 and physical unit value less than 0.5.
**Renewables include solar, wind, wood, biogas, bio solid waste and hydroelectric.
Source: Energy Information Administration, *State Energy Data*.

Figure 1.7

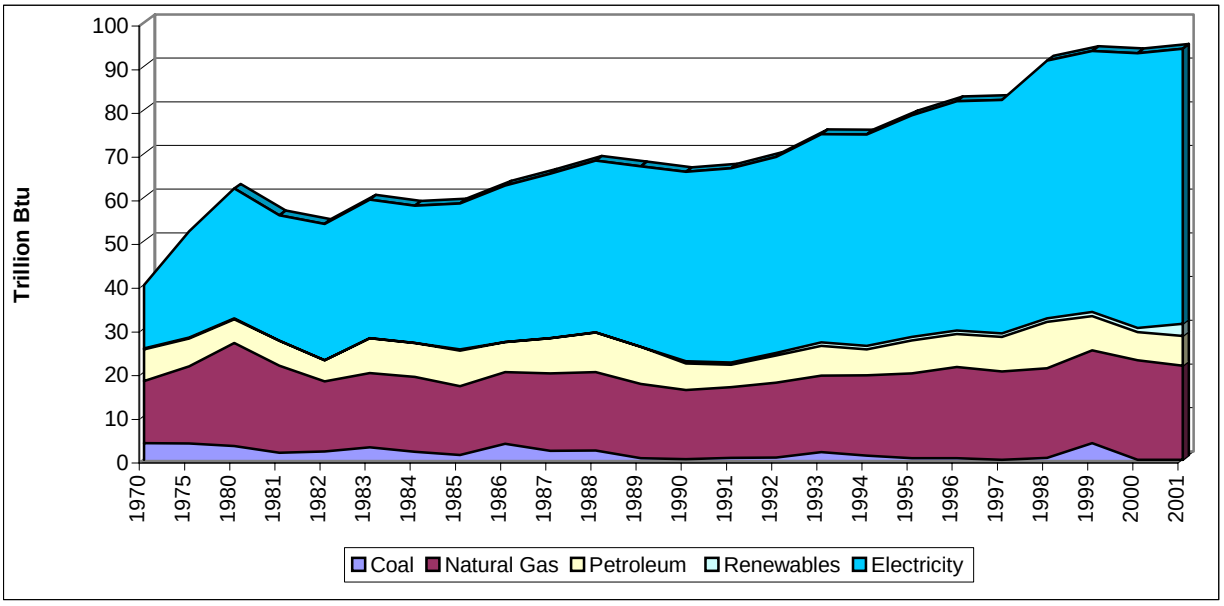
Comparison of U.S. and South Carolina Commercial Sector Energy Consumption, 2001



Source: Energy Information Administration, *State Energy Data*.

Figure 1.8

South Carolina Commercial Sector Energy Consumption, 1970-2001



Source: Energy Information Administration, *State Energy Data*.

South Carolina Industrial Sector Energy Consumption

South Carolina experienced an increase of 87.4% in energy consumption in the industrial sector between 1970-2001, as compared with 55.7% in the United States. As a result, South Carolina ranks 16th in the nation in industrial energy consumption as indicated by data for 2001. Unlike the residential and commercial sectors, which rely primarily on electricity, energy consumption in South Carolina's industrial sector is divided between electricity (29.3%) and natural gas (22.5%). Petroleum accounted for 19%, renewable energy 14.6%, and coal 14.5% as fuel sources in the industrial sector in 2001. On the national level, petroleum (36.9%) and natural gas (34.7%) were the leading fuel sources for the industrial sector.

Table 1.5

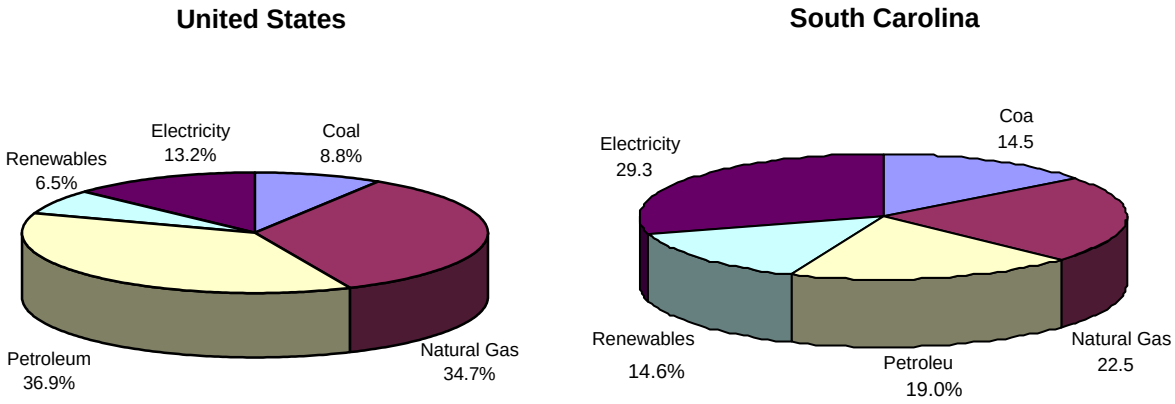
South Carolina Industrial Energy Use Estimates by Type of Fuel
1970-2001
(Trillions of Btu and Percent of Total)

Year	Coal		Natural Gas		Petroleum		Renewables*		Electricity		Net Energy Use	Total Resource[1]
1970	44.2	18.3%	80.9	33.5%	50.5	20.9%	31.4	13.0%	34.5	14.3%	241.5	325.1
1975	28.2	12.1%	72.0	30.8%	57.8	24.7%	32.4	13.8%	43.6	18.6%	234.0	338.9
1980	44.0	14.7%	95.1	31.8%	77.4	25.9%	28.2	9.4%	54.5	18.2%	299.2	431.9
1981	50.4	18.0%	97.5	34.8%	70.6	25.2%	0.5	0.2%	61.5	21.9%	280.5	427.0
1982	56.1	23.7%	63.4	26.8%	56.8	24.0%	0.5	0.2%	60.1	25.4%	236.9	381.4
1983	54.4	22.3%	64.5	26.4%	61.1	25.0%	0.5	0.2%	63.7	26.1%	244.2	396.7
1984	55.1	20.6%	71.3	26.7%	67.1	25.1%	0.5	0.2%	73.1	27.4%	267.1	437.3
1985	62.8	21.1%	64.8	21.8%	62.3	20.9%	33	11.1%	74.5	25.1%	297.4	472.4
1986	61.5	18.6%	63.3	19.1%	65.0	19.6%	63.6	19.2%	77.8	23.5%	331.2	447.1
1987	64.2	18.4%	67.2	19.3%	72.3	20.7%	63.3	18.1%	82.0	23.5%	349.0	473.5
1988	65.2	17.7%	71.0	19.3%	83.8	22.8%	65.9	17.9%	82.3	22.4%	368.2	488.7
1989	62.0	17.0%	76.5	20.9%	75.5	20.7%	68.4	18.7%	82.9	22.7%	365.3	483.6
1990	58.0	15.1%	89.3	23.3%	76.3	19.9%	75.6	19.7%	84.3	22.0%	383.5	567.9
1991	55.8	14.3%	88.1	22.6%	84.4	21.7%	74.7	19.2%	86.5	22.2%	389.5	577.6
1992	54.8	13.5%	96.9	23.8%	88.9	21.9%	76.1	18.7%	89.8	22.1%	406.5	597.9
1993	60.3	14.4%	98.3	23.5%	92.4	22.1%	75.6	18.1%	91.7	21.9%	418.3	612.0
1994	58.5	14.0%	100.5	24.1%	86.8	20.8%	77	18.4%	94.7	22.7%	417.5	615.2
1995	55.1	13.2%	101.0	24.2%	91.5	21.9%	72	17.2%	98.3	23.5%	417.9	622.9
1996	50.1	12.1%	98.4	23.8%	67.9	16.4%	96.9	23.5%	99.6	24.1%	412.9	620.3
1997	50.5	11.3%	106.1	23.8%	82.0	18.4%	100.2	22.5%	106.7	24.0%	445.5	667.7
1998	49.1	12.1%	105.8	26.1%	73.4	18.1%	69.5	17.1%	107.8	26.6%	405.6	628.4
1999	46.6	11.5%	105.9	26.2%	68.4	17.0%	73	18.1%	109.6	27.2%	403.5	618.2
2000	50.2	12.2%	100.5	24.4%	76.8	18.6%	71.6	17.3%	113.6	27.5%	412.7	607.6
2001	53.1	14.5%	82.7	22.5%	69.8	19.0%	53.7	14.6%	107.6	29.3%	366.9	609.1

[1]Includes energy resources (and losses) accountable to electricity generation, transmission, and distribution.
* Renewables include solar, wind, wood, biogas, bio solid waste and hydroelectric.
Source: Energy Information Administration, *State Energy Data.*

Figure 1.9

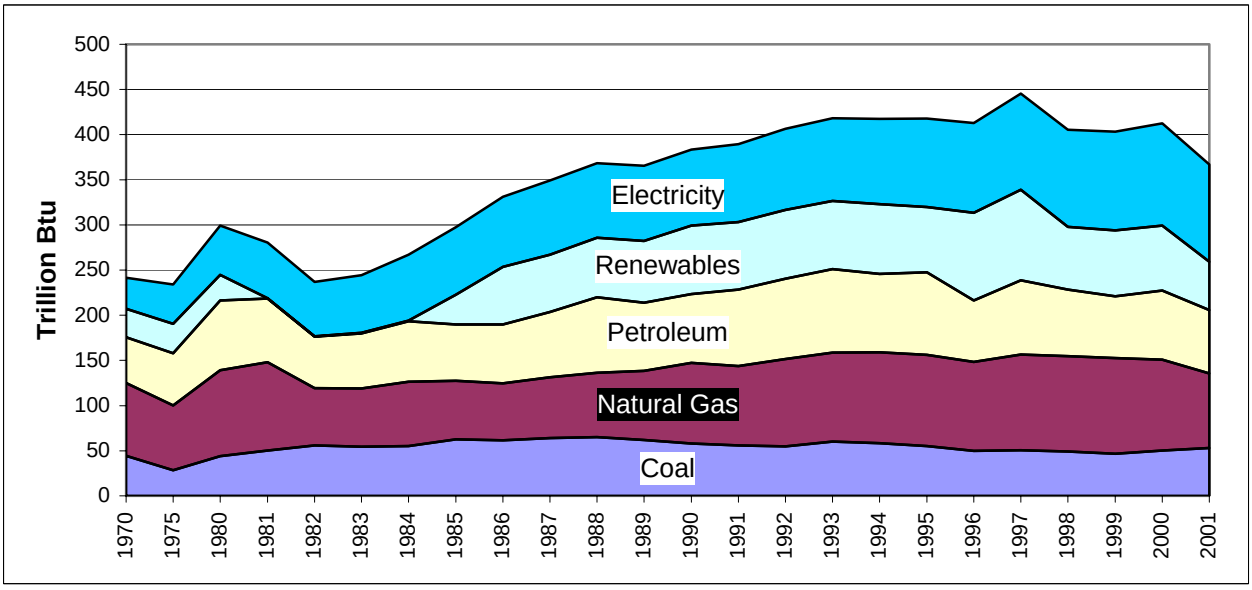
Comparison of U.S. and South Carolina Industrial Sector Energy Consumption, 2001



Source: Energy Information Administration, *State Energy Data*.

Figure 1.10

South Carolina Industrial Sector Energy Consumption, 1970-2001



Source: Energy Information Administration, *State Energy Data*.

South Carolina Transportation Sector Energy Consumption

South Carolinians increased their consumption of energy use in the transportation sector by 92.7% from 1970 to 2001, as compared with 63.2% on the national level. Distillate fuel (diesel) had the highest increase with 170.9% during this period, followed by motor gasoline with an increase of 48.9%. The most significant decline involved residual fuel (-73.1%). In 2001, motor gasoline accounted for 72.1% of the energy use in the transportation sector in South Carolina as compared with 60.8% on the national level. Distillate fuel accounted for 23.4%, while accounting for 20.1% on the national level. As indicated in Table 1.6 below, the other fuel sources play a very negligible role in energy consumption in the South Carolina transportation sector. In 2001, South Carolina ranked 27th in the nation for energy consumption in the transportation sector.

Table 1.6

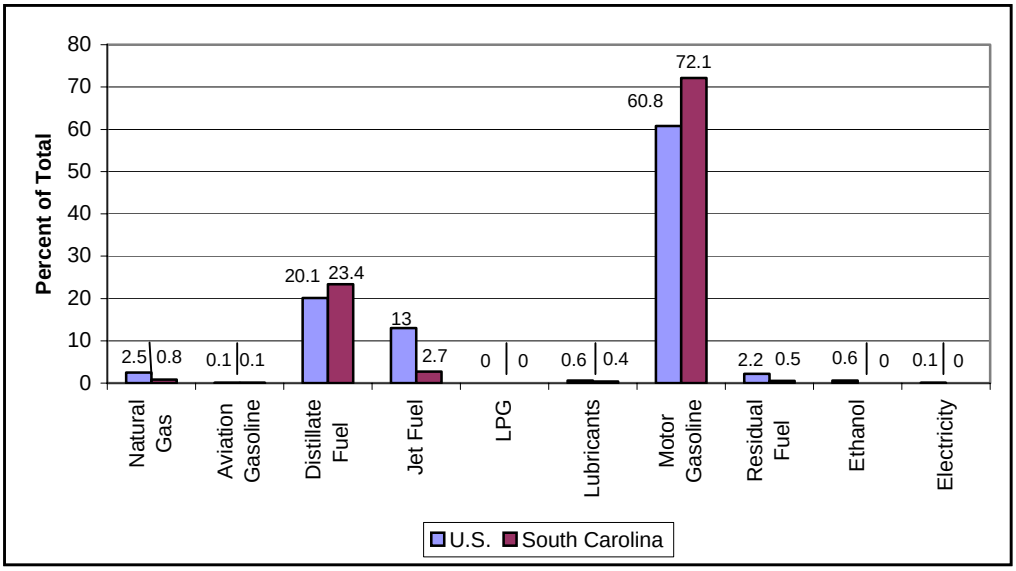
South Carolina Transportation Energy Use Estimates by Type of Fuel
1970-2001
(Trillion Btu)

Year	Natural Gas	Aviation Gasoline	Distillate Fuel	Jet Fuel	LPG*	Lubricants	Motor Gasoline	Residual Fuel	TOTAL
1970	3.4	1.2	16.9	17.1	0.2	1.4	148.2	10.1	198.6
1975	2.7	0.7	23.4	14.5	0.3	1.3	183.8	2.6	229.4
1980	3.1	0.8	35.9	16.6	0.1	1.6	184.8	5.3	248.1
1981	3.3	0.7	33.0	15.5	0.3	1.5	185.3	6.7	246.2
1982	3.0	0.6	36.4	14.8	0.3	1.4	184.6	5.1	246.2
1983	2.7	0.7	40.4	13.7	0.3	1.4	186.8	5.9	252.0
1984	2.7	0.6	45.4	16.6	0.5	1.5	192.4	5.9	265.6
1985	2.3	0.7	45.8	17.2	0.5	1.4	193.2	3.8	265.0
1986	2.4	0.8	47.6	17.2	0.3	1.4	201.8	3.8	275.3
1987	2.5	0.6	47.0	17.3	0.3	1.6	197.6	3.7	270.5
1988	2.6	0.6	49.9	17.5	0.3	1.5	220.4	4.9	297.7
1989	2.6	0.6	47.4	16.9	0.3	1.6	216.6	4.2	290.3
1990	2.9	0.5	63.2	16.0	0.3	1.6	222.2	3.2	310.1
1991	2.9	0.9	67.2	18.7	0.3	1.4	219.4	5.0	315.9
1992	3.0	1.1	60.9	14.1	0.3	1.5	223.9	3.4	308.2
1993	2.8	0.9	59.8	11.1	0.3	1.5	234.6	4.0	315.0
1994	2.7	0.6	73.3	8.1	0.5	1.6	234.3	0.5	321.6
1995	3.0	0.6	65.4	5.8	0.3	1.5	242.6	2.8	322.0
1996	3.2	0.3	66.9	7.3	0.2	1.5	244.9	4.2	328.5
1997	3.0	0.3	71.8	7.5	0.2	1.6	255.2	3.5	343.2
1998	3.3	0.3	82.8	8.1	0.2	1.7	264.6	2.8	363.8
1999	3.7	0.5	85.8	8.7	0.1	1.7	273.0	2.8	376.4
2000	3.6	0.4	89.6	10.6	0.2	1.7	274.4	2.9	383.2
2001	3.1	0.4	89.4	10.5	0.1	1.5	276.0	1.8	382.7

*Liquefied petroleum gases.
Source: Energy Information Administration, *State Energy Data*.

Figure 1.11

Comparison of U.S. and South Carolina Transportation Energy Consumption, 2001



Source: Energy Information Administration, *State Energy Data*.

South Carolina Energy Expenditures

Expenditures by Economic Sector

South Carolinians spent $9.9 billion on energy in 2001. Since 1970, energy expenditures have increased by 915.4% in nominal dollars, while energy consumption increased by 107%. The transportation sector accounts for the largest share of energy expenditures with 38.5% in 2001, followed by the residential sector with 24.3%, the industrial sector with 22.6%, and the commercial sector with 14.7%. This closely reflects the trend on the national level, where the transportation sector also accounts for the largest share of energy expenditures with 37.7%, followed by the residential sector with 24.3%, the industrial sector with 19.9% and the commercial sector with 18.1%.

Table 1.7

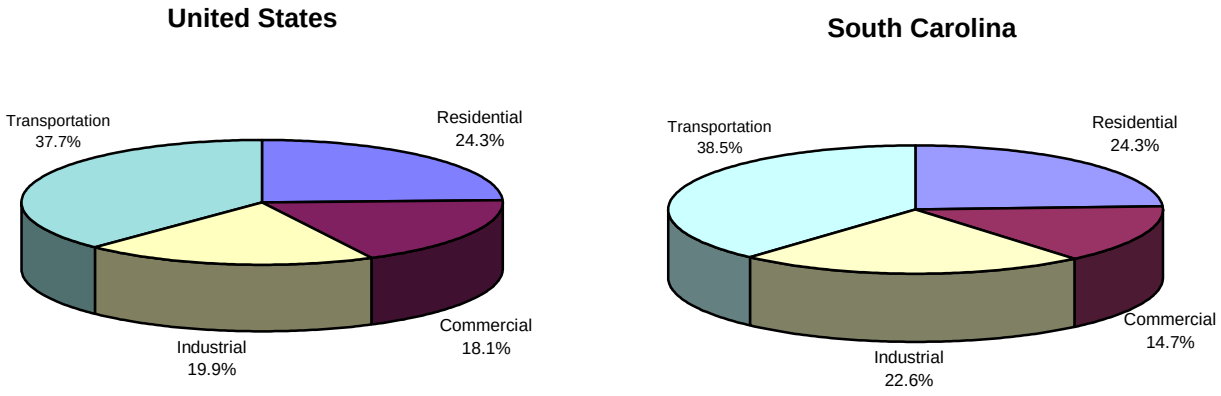
South Carolina Economic Sector Energy Expenditures, 1970-2001
(Million Nominal Dollars)

Year	Residential	Commercial	Industrial	Transportation	Total*	Percent Change
1970	224.2	93.6	197.0	457.0	971.7	N/A
1975	440.0	251.6	512.7	916.4	2,120.8	12.6%
1980	842.8	473.6	1,186.0	2,307.1	4,809.6	26.9%
1981	965.2	533.1	1,510.6	2,576.1	5,585.0	16.1%
1982	1,054.5	616.7	1,387.9	2,431.1	5,490.2	-1.7%
1983	1,161.8	678.1	1,491.0	2,193.2	5,524.1	0.6%
1984	1,234.0	696.3	1,676.5	2,235.9	5,842.6	5.8%
1985	1,322.1	749.2	1,681.1	2,202.9	5,955.3	1.9%
1986	1,429.6	791.5	1,560.5	1,689.2	5,470.8	-8.1%
1987	1,511.6	834.2	1,682.8	1,816.7	5,845.2	6.8%
1988	1,546.2	857.1	1,694.6	1,987.0	6,084.9	4.1%
1989	1,575.1	888.8	1,719.9	2,141.4	6,325.1	3.9%
1990	1,583.8	911.6	1,776.6	2,608.9	6,881.0	8.8%
1991	1,659.0	929.9	1,789.4	2,541.1	6,919.3	0.6%
1992	1,643.3	942.5	1,815.2	2,412.7	6,813.7	-1.5%
1993	1,826.1	1,007.7	1,873.5	2,387.3	7,094.5	4.1%
1994	1,819.8	1,044.2	1,877.7	2,495.5	7,237.2	2.0%
1995	1,952.1	1,096.1	1,921.2	2,581.1	7,550.5	4.3%
1996	2,062.9	1,153.7	1,926.0	2,817.8	7,960.5	5.4%
1997	1,999.2	1,168.6	2,070.0	2,885.3	8,123.1	2.0%
1998	2,109.2	1,257.1	1,900.9	2,613.8	7,881.0	-3.0%
1999	2,161.8	1,284.1	1,918.7	2,948.6	8,313.2	5.5%
2000	2,386.8	1,398.2	2,317.6	4,073.7	10,176.3	22.4%
2001	2,397.1	1,446.6	2,228.0	3,795.4	9,867.1	-3.0%

*Total includes energy input estimates at electric utilities.
Source: Energy Information Administration, *State Energy Data.*

Figure 1.12

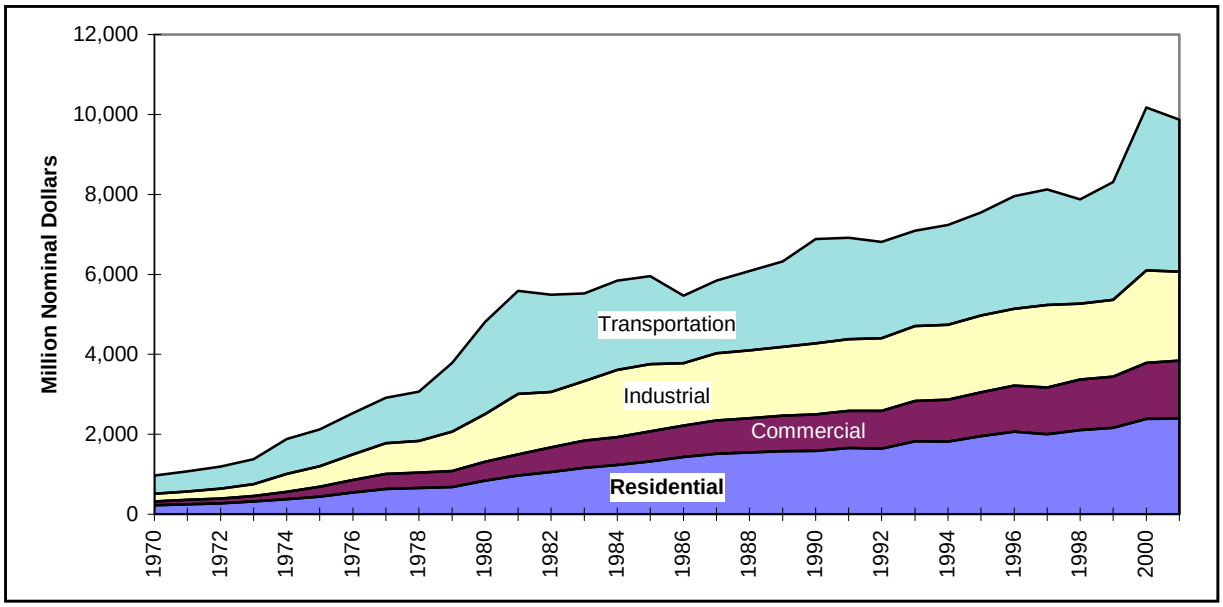
Comparison of U.S. and South Carolina Energy Expenditure Estimates by Sector, 2001



Source: Energy Information Administration, *State Energy Data.*

Figure 1.13

South Carolina End-Use Energy Expenditures by Sector, 1970-2001



Source: Energy Information Administration, *State Energy Data.*

End-Use Expenditures by Fuel Source

For the second consecutive year since 1990, South Carolina petroleum expenditures surpassed that of electricity in 2001. Petroleum expenditures accounted for 41.3% in South Carolina as compared with 44.5% on the national level. Electricity accounted for 40.4% of expenditures in South Carolina and 32.4% in the U.S. In South Carolina, natural gas makes up 9.5% of total expenditures, and 18.5% across the nation. South Carolina spends more on coal (6.2%) than the U.S. as a whole (3.7%). Both nuclear fuel and biofuels have negligible expenditures in both South Carolina and the nation. In 2001, South Carolina ranked 27th in the nation in petroleum expenditures, 34th in natural gas expenditures, 16th in coal expenditures, and 20th in electricity expenditures.

Table 1.8

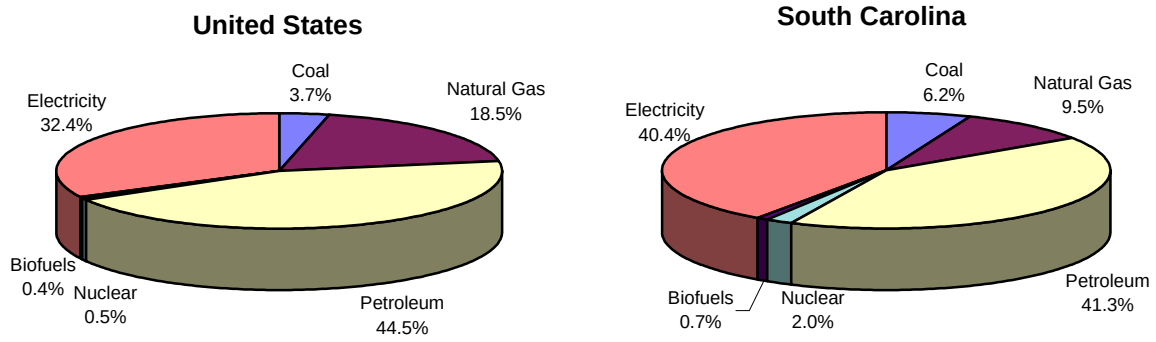
South Carolina End-Use Expenditure Estimates by Fuel Source, 1970-2001
(Million of Nominal Dollars)

Year	Coal	Natural Gas	Petroleum	Nuclear	Biofuels	Electricity	Total Energy[1]
1970	65.3	91.4	569.7	*	15.6	294.7	971.7
1975	174.7	143.3	1,166.8	40.6	18.0	782.8	2,120.8
1980	392.2	441.2	2,929.4	83.4	18.4	1,412.5	4,809.6
1981	486.0	552.8	3,268.6	85.5	18.6	1,725.9	5,585.0
1982	524.5	443.1	2,930.3	70.3	18.9	1,996.1	5,490.2
1983	455.2	520.1	2,725.1	140.6	19.3	2,156.7	5,524.1
1984	478.0	577.4	2,797.6	152.5	25.4	2,337.2	5,842.6
1985	493.6	495.3	2,802.4	214.5	27.1	2,523.7	5,955.3
1986	480.7	435.6	2,147.2	233.9	30.9	2,741.1	5,470.8
1987	512.9	488.0	2,308.5	269.0	28.3	2,909.0	5,845.2
1988	526.8	479.3	2,513.9	257.5	29.5	2,955.0	6,084.9
1989	514.1	495.2	2,678.2	251.7	20.6	3,038.0	6,325.1
1990	499.0	525.9	3,138.0	242.8	18.9	3,113.3	6,881.0
1991	478.2	492.8	3,119.2	240.5	18.0	3,211.3	6,919.3
1992	451.3	549.8	2,927.3	241.2	17.3	3,230.5	6,813.7
1993	528.2	598.5	2,905.7	247.1	18.1	3,472.0	7,094.5
1994	528.1	617.7	2,995.9	250.0	20.3	3,509.2	7,237.2
1995	486.9	621.3	3,131.1	267.8	16.4	3,703.0	7,550.5
1996	533.3	710.7	3,343.1	225.7	29.8	3,801.6	7,960.5
1997	539.1	741.3	3,518.0	201.7	26.5	3,770.9	8,123.1
1998	556.9	697.5	3,111.1	215.4	11.8	4,008.5	7,881.0
1999	590.9	718.0	3,429.1	226.3	20.7	4,085.5	8,313.2
2000	613.3	934.2	4,809.2	218.7	60.4	4,331.8	10,176.3
2001	665.3	1,011.8	4,411.9	213.9	71.0	4,317.2	9,867.1

*Denotes value is less than 0.05 million nominal dollars.
[1]Total energy includes electric utility fuel losses.
Source: Energy Information Administration, *State Energy Data.*

Figure 1.14

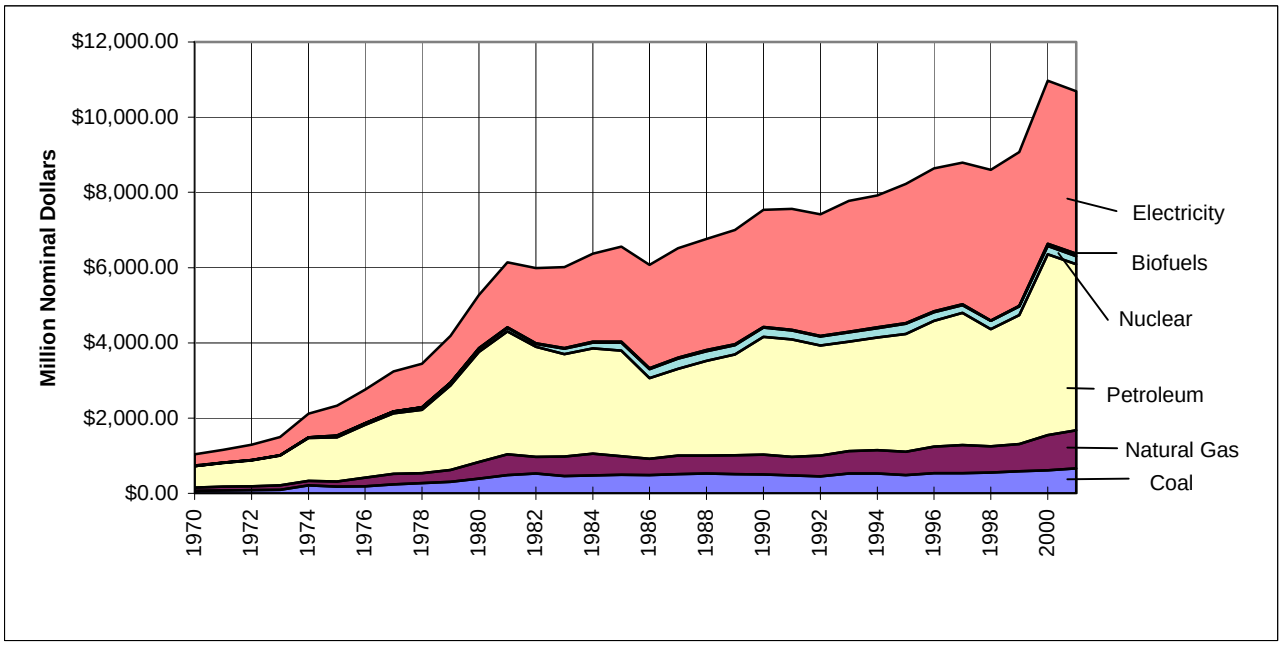
Comparison of U.S. and South Carolina End-Use Energy Expenditure Estimates by Fuel Source, 2001



Source: Energy Information Administration, *State Energy Data*.

Figure 1.15

South Carolina End-Use Energy Expenditure Estimates by Fuel Source, 1970-2001



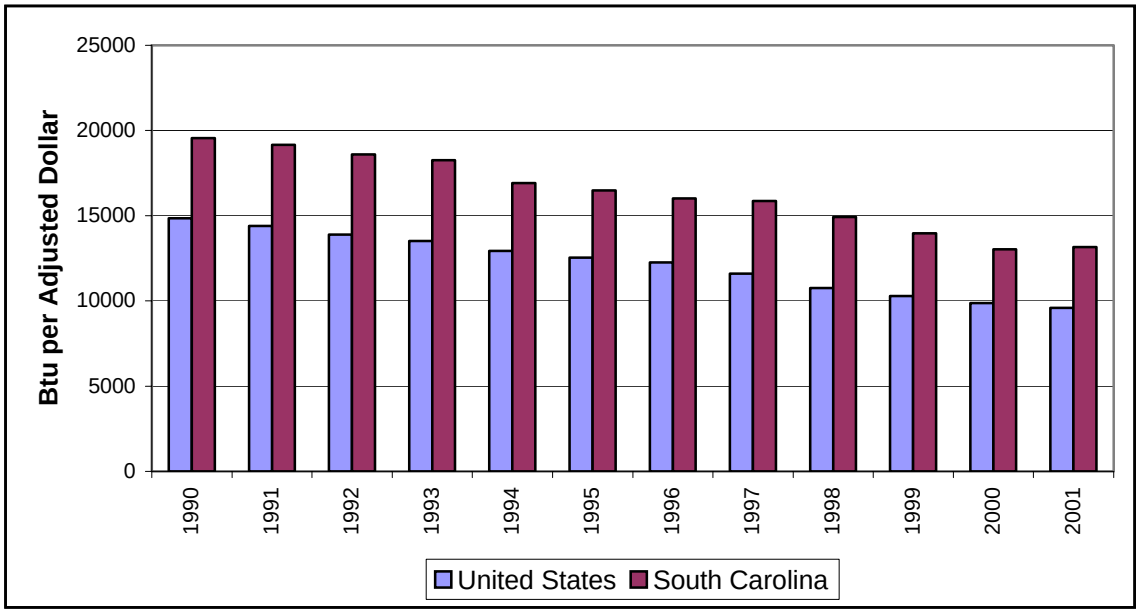
*The total expenditures in this chart do not include the losses due to electric utility fuel, thus the overall expenditure total is higher.
Source: Energy Information Administration, *State Energy Data*.

Energy Consumption per Dollar Gross State Product/Gross Domestic Product

When considering energy efficiency as measured in energy consumption per dollar of gross state product, South Carolina has made significant progress over the last several years. Since 1990, the economy has grown somewhat faster than energy consumption, resulting in a 32.7% decrease (from 19,558 to 13,153) in Btu consumed per dollar of economic output (gross state product, adjusted for inflation). Nevertheless, South Carolina's energy efficiency trails behind the national average of 9,597 Btu per dollar of gross domestic product (GDP), 27% lower than South Carolina's energy efficiency index. Consequently, South Carolina is ranked 17th highest in energy use per dollar of gross domestic product in the U.S. for 2001.

Figure 1.16

South Carolina and U.S. Energy Consumption per Dollar GSP/GDP, 1990-2001



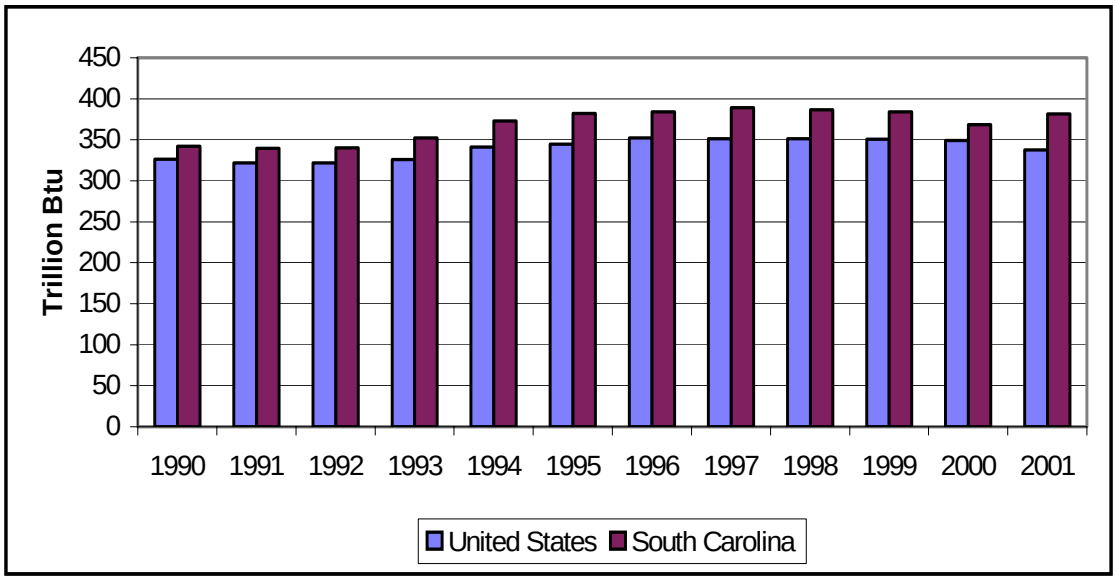
Sources: Energy Information Administration, *State Energy Data;* U.S. Department of Commerce, Bureau of Economic Analysis.

South Carolina Energy Consumption per Capita

Another measure of energy efficiency is per capita energy use. South Carolina ranks 18th in total energy consumption per capita, using more energy per person than 32 other states. However, South Carolina's energy consumption per capita is showing signs of leveling off after increasing more rapidly than the United States average during most of the 1990's. South Carolina saw an 11.5% increase in energy consumption per capita between 1990 and 2001, while the United States per capita rate rose only 3.5%. South Carolina's total energy use increased 21.1% between 1990 and 2001, while the population grew 16% over the same period.

Figure 1.17

South Carolina and U.S. Energy Consumption per Capita, 1990-2001



Source: Energy Information Administration, *State Energy Data*.

SECTION 2: ELECTRICITY

Electricity Generation in South Carolina

As South Carolina's economy and population has grown, so has its need for electricity. From 1984 to 2004, electricity generation in South Carolina increased by 106%. On a comparative level, nuclear energy accounted for 52.7% of electricity generation in South Carolina in 2004, while accounting for only 20.1% in the United States. Coal is the major fuel source for electricity generation in the United States, accounting for 50.4% in 2004 as compared with 40.1% in South Carolina. Geothermal, wood, wind, waste and solar energy sources (green energy) accounted for 2.3% of electricity generation on the national level and 1.6% in South Carolina.

Table 2.1

Net Power Generation from South Carolina Electric Utilities by Energy Source
1984 – 2004
(Million Kilowatthours)

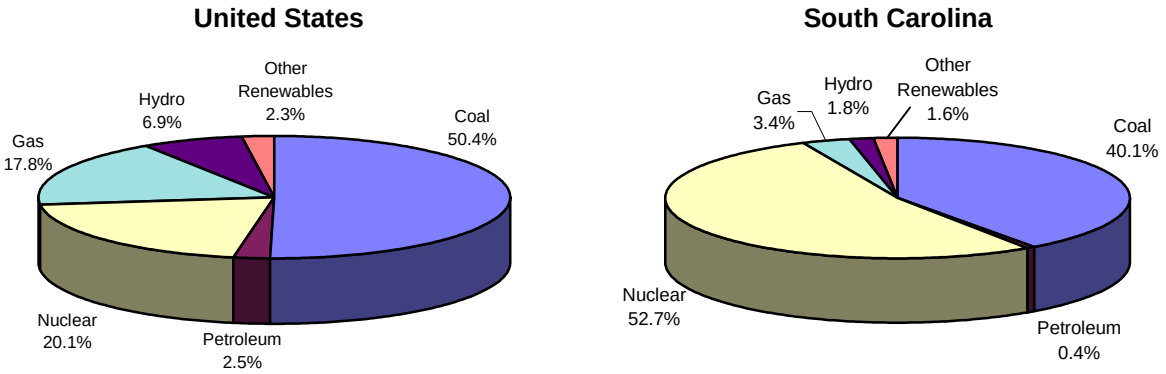
Year	Coal	Petroleum	Nuclear	Gas	Hydro	Other Renewables*	TOTAL	Percent Change
1984	18,610	80	25,190	40	3,270	N/A	47,190	-3.3%
1985	19,820	1,100	34,410	50	1,870	N/A	57,250	21.3%
1986	19,502	66	35,625	130	1,216	N/A	56,539	-1.2%
1987	22,858	68	39,289	26	2,157	N/A	64,398	13.9%
1988	23,484	94	40,743	223	747	N/A	65,291	1.4%
1989	23,799	132	40,779	255	2,016	N/A	66,981	2.6%
1990	22,874	72	42,880	701	2,728	N/A	69,255	3.4%
1991	23,165	83	43,108	980	2,496	N/A	69,832	0.8%
1992	23,013	67	45,537	148	2,710	N/A	71,475	2.4%
1993	26,531	93	46,187	119	2,650	N/A	75,580	5.7%
1994	26,994	108	44,466	279	2,347	N/A	74,194	-1.8%
1995	25,802	131	49,174	601	2,734	N/A	78,442	5.7%
1996	30,305	126	43,572	91	2,233	N/A	76,327	-2.7%
1997	31,042	186	44,916	182	2,077	N/A	78,403	2.7%
1998	32,316	330	48,758	415	2,540	N/A	84,359	7.6%
1999	35,234	300	50,814	336	660	N/A	87,344	2.0%
2000	38,321	265	50,889	187	417	N/A	90,079	3.1%
2001	36,303	226	49,872	195	118	N/A	86,714	-3.7%
2002	36,490	179	53,327	3,463	162	13	93,621	8.0%
2003	37,883	387	50,418	2,103	2,365	1,207	94,363	0.8%
2004	38,965	408	51,201	3,308	1,732	1,570	97,184	3.0%

*Beginning in 2003, this category includes wood, black liquor, other wood waste, municipal solid waste, landfill gas, sludge waste, tires, agriculture byproducts, other biomass, geothermal, solar thermal, photovoltaic energy, and wind. Also reflects more accurate accounting of renewable energy.

Source: Energy Information Administration, *Electric Power Monthly*.

Figure 2.1

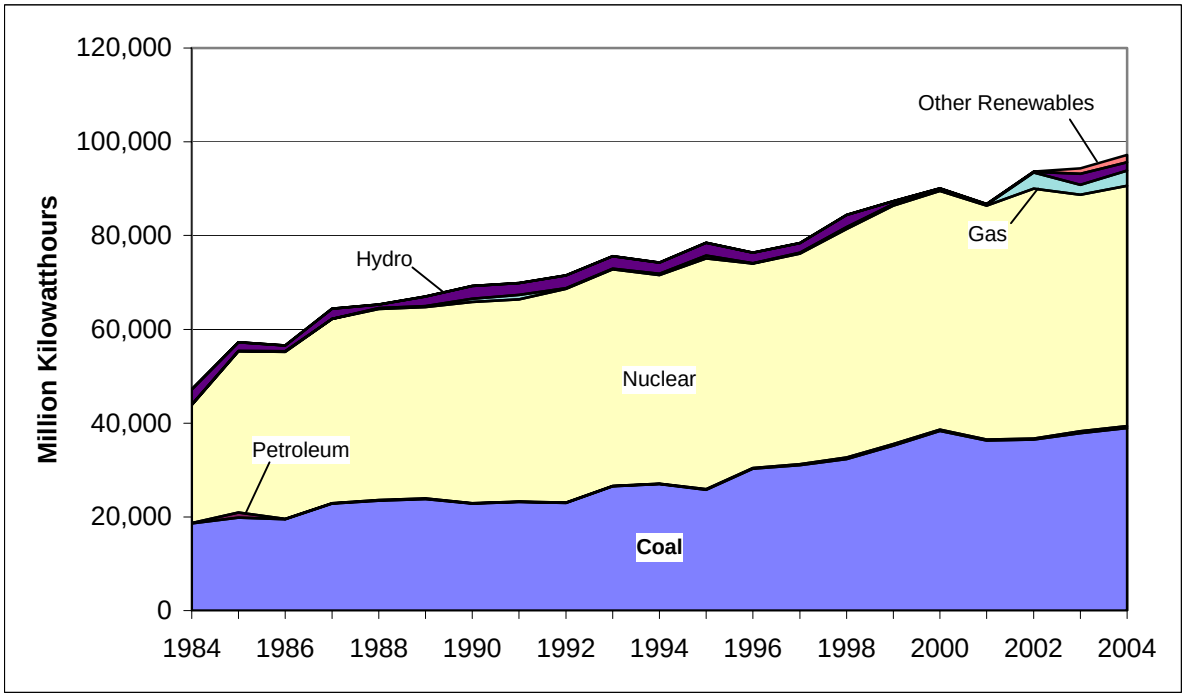
U.S. and South Carolina Electricity Generation by Fuel Source Comparison, 2004



Sources: Energy Information Administration, *Electric Power Monthly*.

Figure 2.2

South Carolina Electricity Generation by Fuel Source, 1984-2004



Sources: Energy Information Administration, *State Energy Data* Report and *Electric Power Monthly*.

Table 2.2

South Carolina Monthly Electric Utility Net Generation by Fuel Source, 1993-2004
(Million Kilowatthours)

1993

Month	Coal	Oil	Gas	Nuclear	Hydro	TOTAL
Jan	1,875	4	*	3,992	538	6,409
Feb	1,797	7	1	3,494	451	5,750
Mar	2,216	12	6	3,373	477	6,084
Apr	2,070	6	2	3,866	425	6,369
May	2,066	4	2	3,932	246	6,250
Jun	2,539	5	19	3,672	101	6,336
Jul	2,882	37	52	4,548	47	7,566
Aug	2,743	6	28	4,634	75	7,486
Sep	2,367	2	8	4,114	31	6,522
Oct	1,806	3	*	4,123	44	5,976
Nov	1,961	3	*	3,131	46	5,141
Dec	2,209	4	1	3,308	169	5,691
TOTAL	26,531	93	119	46,187	2,650	75,580
% TOTAL	35.1%	0.1%	0.2%	61.1%	3.5%	100.0%

1994

Month	Coal	Oil	Gas	Nuclear	Hydro	TOTAL
Jan	2,484	47	*	3,459	188	6,178
Feb	2,012	2	2	3,092	203	5,311
Mar	2,081	3	2	3,648	266	6,000
Apr	1,742	7	3	4,176	211	6,139
May	1,907	6	5	3,255	66	5,239
Jun	2,545	19	21	3,163	80	5,828
Jul	2,662	2	3	4,023	151	6,841
Aug	2,575	2	1	4,234	331	7,143
Sep	2,388	4	5	3,941	158	6,496
Oct	2,176	3	104	3,529	220	6,032
Nov	2,189	4	62	3,590	188	6,033
Dec	2,232	8	71	4,357	286	6,954
TOTAL	26,993	107	279	44,467	2,348	74,194
% TOTAL	36.4%	0.1%	0.4%	59.9%	3.2%	100.0%

1995

Month	Coal	Oil	Gas	Nuclear	Hydro	TOTAL
Jan	2,160	6	1	4,774	412	7,353
Feb	1,912	5	*	3,649	394	5,960
Mar	1,651	4	66	3,989	368	6,078
Apr	1,713	5	*	4,369	88	6,175
May	2,375	10	14	3,242	53	5,694
Jun	2,334	14	43	3,733	173	6,297
Jul	2,857	24	70	4,187	88	7,226
Aug	2,804	36	161	4,721	134	7,856
Sep	1,962	4	140	4,589	174	6,869
Oct	1,755	4	104	4,093	261	6,217
Nov	1,942	9	1	3,243	367	5,562
Dec	2,337	10	1	4,585	222	7,155
TOTAL	25,802	131	601	49,174	2,734	78,442
% TOTAL	32.9%	0.2%	0.8%	62.7%	3.5%	100.0%

1996

Month	Coal	Oil	Gas	Nuclear	Hydro	TOTAL
Jan	2,429	7	*	4,701	273	7,410
Feb	2,171	18	*	4,077	427	6,693
Mar	2,221	16	1	4,539	410	7,187
Apr	2,184	8	1	3,720	187	6,100
May	2,864	13	14	3,952	121	6,964
Jun	2,805	11	18	4,158	110	7,102
Jul	3,158	10	16	3,828	12	7,024
Aug	3,009	3	4	3,571	130	6,717
Sep	2,331	6	34	3,163	120	5,654
Oct	2,054	6	1	2,411	148	4,620
Nov	2,472	9	1	2,846	83	5,411
Dec	2,607	19	1	2,606	212	5,445
TOTAL	30,305	126	91	43,572	2,233	76,327
% TOTAL	39.7%	0.2%	0.1%	57.1%	2.9%	100.0%

1997

Month	Coal	Oil	Gas	Nuclear	Hydro	TOTAL
Jan	2,717	14	1	2,964	234	5,930
Feb	2,036	4	*	3,456	294	5,790
Mar	1,852	6	1	4,036	404	6,299
Apr	2,001	8	5	3,290	238	5,542
May	2,150	12	4	3,614	257	6,037
Jun	2,581	25	48	4,083	129	6,866
Jul	3,333	39	63	4,391	85	7,911
Aug	3,116	20	25	4,589	51	7,801
Sep	2,744	14	13	4,074	26	6,871
Oct	3,024	23	14	3,343	55	6,459
Nov	2,703	14	6	3,706	107	6,536
Dec	2,785	7	2	3,370	197	6,361
TOTAL	31,042	186	182	44,916	2,077	78,403
% TOTAL	39.6%	0.2%	0.2%	57.3%	2.6%	100.0%

1998

Month	Coal	Oil	Gas	Nuclear	Hydro	TOTAL
Jan	2,618	5	1	3,843	505	6,972
Feb	2,091	1	*	4,088	516	6,696
Mar	2,424	24	6	4,028	475	6,957
Apr	2,054	6	2	3,821	468	6,351
May	2,674	53	50	4,237	287	7,301
Jun	3,315	76	102	4,531	75	8,099
Jul	3,479	66	86	4,766	-6	8,391
Aug	3,496	46	88	3,679	28	7,337
Sep	3,105	25	67	3,635	39	6,871
Oct	2,401	5	5	3,628	19	6,058
Nov	2,145	12	6	4,037	39	6,239
Dec	2,514	11	2	4,465	95	7,087
TOTAL	32,316	330	415	48,758	2,540	84,359
% TOTAL	38.3%	0.4%	0.5%	57.8%	3.0%	100.0%

1999

Month	Coal	Oil	Gas	Nuclear	Hydro	TOTAL
Jan	2,668	34	1	4,813	195	7,711
Feb	2,317	4	1	4,353	174	6,849
Mar	2,680	13	2	4,840	111	7,646
Apr	3,108	15	7	3,834	18	6,982
May	3,050	19	6	2,693	-8	5,760
Jun	3,177	24	26	3,554	74	6,855
Jul	3,600	74	150	4,587	1	8,412
Aug	3,684	61	124	4,758	-34	8,593
Sep	2,885	12	12	4,487	15	7,411
Oct	2,642	15	*	4,438	11	7,106
Nov	2,562	10	4	4,143	43	6,762
Dec	2,861	19	3	4,314	60	7,257
TOTAL	35,234	300	336	50,814	660	87,344
% TOTAL	40.3%	0.3%	0.4%	58.2%	0.8%	100.0%

2000

Month	Coal	Oil	Gas	Nuclear	Hydro	TOTAL
Jan	3,182	26	2	4,707	94	8,011
Feb	2,875	9	1	4,273	105	7,263
Mar	2,857	7	2	4,228	99	7,193
Apr	2,453	5	4	4,007	82	6,551
May	3,212	21	38	4,343	19	7,633
Jun	3,412	26	49	4,470	-10	7,947
Jul	3,511	26	37	4,838	-20	8,392
Aug	3,572	24	42	4,819	-1	8,456
Sep	3,166	13	5	4,620	3	7,807
Oct	3,191	6	2	3,746	26	6,971
Nov	3,051	14	4	3,279	7	6,355
Dec	3,839	88	1	3,559	13	7,500
TOTAL	38,321	265	187	50,889	417	90,079
% TOTAL	42.5%	0.3%	0.2%	56.5%	0.5%	100.0%

2001

Month	Coal	Oil	Gas	Nuclear	Hydro	TOTAL
Jan	3,583	42	2	3,769	36	7,432
Feb	3,005	15	1	3,438	29	6,488
Mar	3,052	25	1	4,070	88	7,236
Apr	2,436	27	4	3,709	42	6,218
May	3,048	14	7	3,976	-11	7,034
Jun	3,484	8	21	4,534	-41	8,006
Jul	3,559	14	25	4,779	-30	8,347
Aug	3,680	45	34	4,823	-32	8,550
Sep	3,050	4	4	4,028	N/A	7,086
Oct	2,426	15	90	4,222	37	6,790
Nov	2,393	10	4	4,315	N/A	6,722
Dec	2,587	7	2	4,209	N/A	6,805
TOTAL	36,303	226	195	49,872	118	86,714
% TOTAL	41.9%	0.3%	0.2%	57.5%	0.1%	100.0%

2002

Month	Coal	Oil	Gas	Nuclear	Hydro	Other**	TOTAL
Jan	2,841	10	341	4,928	50	1	8,170
Feb	2,680	8	176	4,464	36	1	7,364
Mar	2,942	24	68	4,737	76	1	7,847
Apr	2,865	11	275	3,732	-	2	6,883
May	3,159	18	514	3,641	-2	1	7,330
Jun	3,294	32	462	4,547	-55	1	8,280
Jul	3,661	25	605	4,843	-67	1	9,067
Aug	3,437	11	563	4,742	-53	1	8,700
Sep	3,184	11	303	4,686	-56	1	8,128
Oct	2,749	8	93	4,117	-	1	6,967
Nov	2,578	6	39	3,931	68	1	6,622
Dec	3,100	15	24	4,959	165	1	8,263
TOTAL	36,490	179	3,463	53,327	162	13	93,621
% TOTAL	39.0%	0.2%	3.7%	57.0%	0.2%	N/A	100.0%

2003

Month	Coal	Oil	Gas	Nuclear	Hydro	Other Renewables**	TOTAL
Jan	3,535	62	319	4,971	96	78	9,061
Feb	3,016	62	102	4,426	72	109	7,787
Mar	2,877	28	35	4,112	348	109	7,509
Apr	2,352	21	190	4,596	356	105	7,620
May	2,777	26	183	4,188	358	99	7,631
Jun	3,223	51	180	4,338	296	110	8,198
Jul	3,544	22	350	4,877	278	120	9,191
Aug	3,558	20	517	4,739	203	84	9,121
Sep	3,279	13	82	4,137	57	81	7,649
Oct	3,015	16	41	3,775	57	100	7,004
Nov	3,157	17	26	2,846	72	98	6,216
Dec	3,550	49	78	3,413	172	114	7,376
TOTAL	37,883	387	2,103	50,418	2,365	1,207	94,363
% TOTAL	40.1%	0.4%	2.2%	53.4%	2.5%	1.3%	100.0%

2004

Month	Coal	Oil	Gas	Nuclear	Hydro	Other Renewables**	TOTAL
Jan	3,707	91	246	4,716	59	138	8,957
Feb	3,267	43	241	4,384	71	132	8,138
Mar	2,842	39	81	4,581	152	123	7,818
Apr	2,807	21	119	3,671	106	134	6,858
May	3,236	41	404	3,730	113	154	7,678
Jun	3,608	32	319	4,368	120	131	8,578
Jul	3,728	24	476	4,883	134	135	9,380
Aug	3,645	25	529	4,847	128	132	9,306
Sep	3,019	25	323	4,118	205	124	7,814
Oct	2,755	27	163	3,639	195	135	6,914
Nov	2,886	15	119	4,089	166	95	7,370
Dec	3,465	25	288	4,175	283	137	8,373
TOTAL	38,965	408	3,308	51,201	1,732	1,570	97,184
% TOTAL	40.1%	0.4%	3.4%	52.7%	1.8%	1.6%	100.0%

*Denotes the value is less than 0.5.
** includes wood, black liquor, other wood waste, municipal solid waste, landfill gas, sludge waste, tires, agriculture byproducts, other biomass, geothermal, solar thermal, photovoltaic energy, and wind.
Source: Energy Information Administration, *Electric Power Monthly*.

Number of Electric Consumers in South Carolina

The number of electric consumers in South Carolina increased by 25.2% from 1993 to 2003. Residential consumers increased by 24.1% during this period, with commercial consumers increasing by 39.9%, and industrial consumers increasing by 14.7%. In 2003, the residential sector accounted for 85.8% of all electric consumers, followed by the commercial sector with 14% of all consumers.

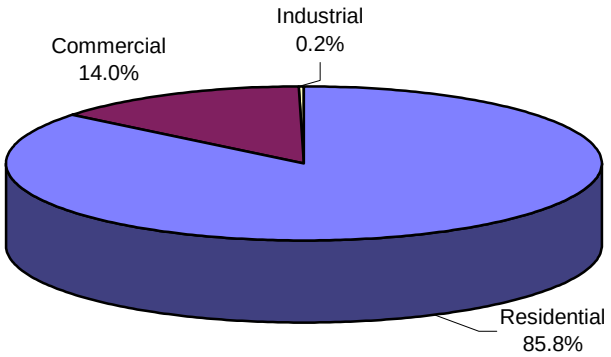
Table 2.3

Number of Ultimate Electric Consumers in South Carolina by Sector 1993-2003

Year	Residential	Commercial*	Industrial	Other**	Total	Percent Change
1993	1,505,304	217,696	4,379	11,974	1,739,353	1.6%
1994	1,536,458	222,395	4,342	12,437	1,775,632	2.1%
1995	1,567,196	228,523	4,498	12,490	1,812,707	2.1%
1996	1,608,129	239,495	4,681	14,841	1,867,146	3.0%
1997	1,641,416	248,801	6,091	13,790	1,910,098	2.3%
1998	1,683,858	262,630	4,751	18,428	1,969,667	3.1%
1999	1,724,911	266,724	4,900	15,550	2,012,085	2.2%
2000	1,764,298	274,003	5,077	16,118	2,059,496	2.4%
2001	1,791,625	285,701	4,941	16,450	2,098,717	1.9%
2002	1,836,612	286,840	5,136	16,232	2,144,820	2.2%
2003	1,867,922	304,528	5,024	N/A**	2,177,474	1.5%

*Beginning in 2003, the "Other" sector is included in the commercial sector.
**Includes sales for public street and highway lighting, other sales to public authorities, sales to railroads and railways, and interdepartmental sales.
Source: Energy Information Administration, *Electric Sales and Revenue Database*.

Figure 2.3
South Carolina Electric Customers by Sector, 2003



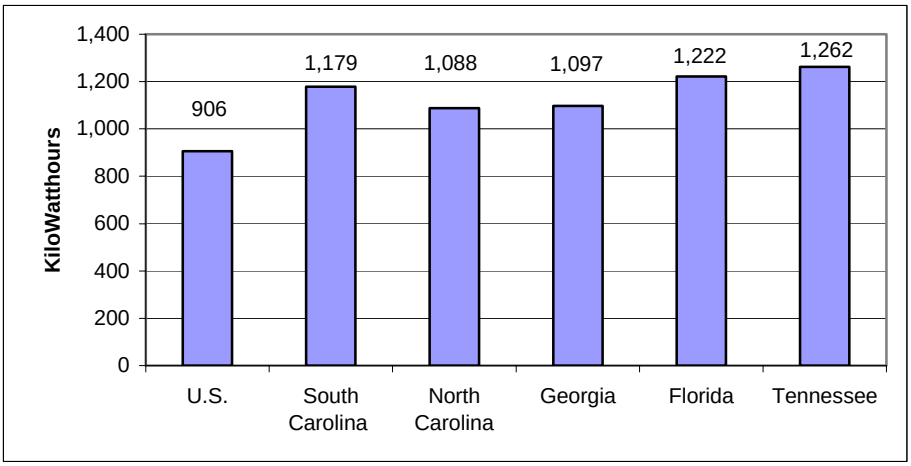
Source: Energy Information Administration, *Electric Sales and Revenue*.

Comparison of Average Monthly Electric Consumption and Monthly Electric Bill by Sector

The residential average monthly kWh consumption in South Carolina in 2003 was 1,179 (7th highest in U.S.) with an average monthly bill of $94.45 (5th highest in U.S.). The average monthly kWh consumption in the commercial sector was 5,291 (34th highest in U.S.) with the average monthly electric bill totaling $360.15 (36th highest in U.S.). In the industrial sector, the average monthly kWh consumption was 519,114 (4th highest in U.S.) with an average monthly electric bill of $20,752.09 (7th highest in U.S.).

Figure 2.4

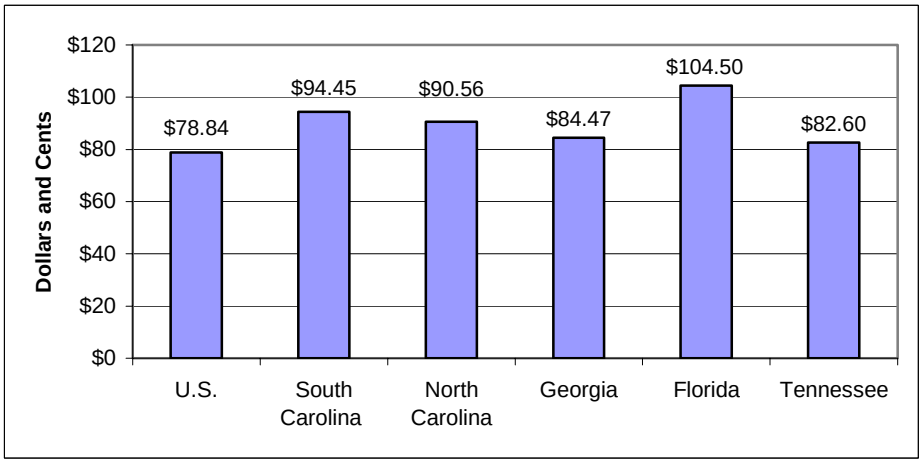
National and Regional Comparison of Residential Average Monthly Consumption, 2003



Source: Energy Information Administration, *Electric Sales and Revenue Database*.

Figure 2.5

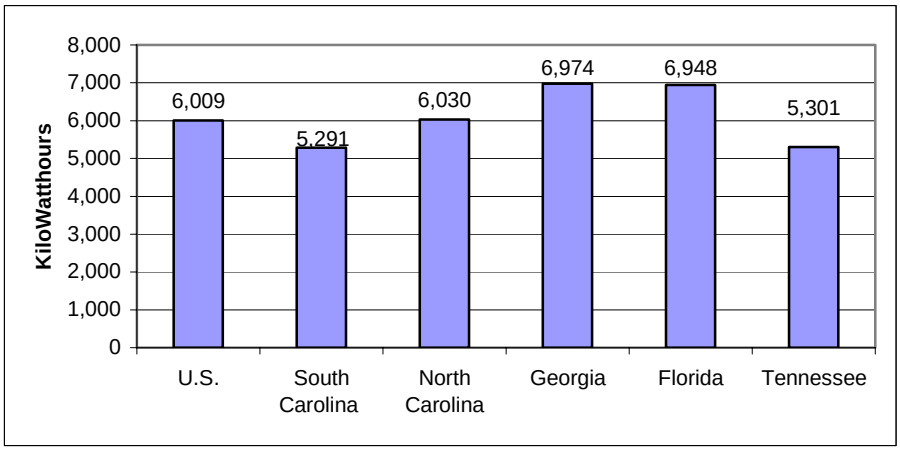
National and Regional Comparison of Residential Average Monthly Bill, 2003



Source: Energy Information Administration, *Electric Sales and Revenue Database*.

Figure 2.6

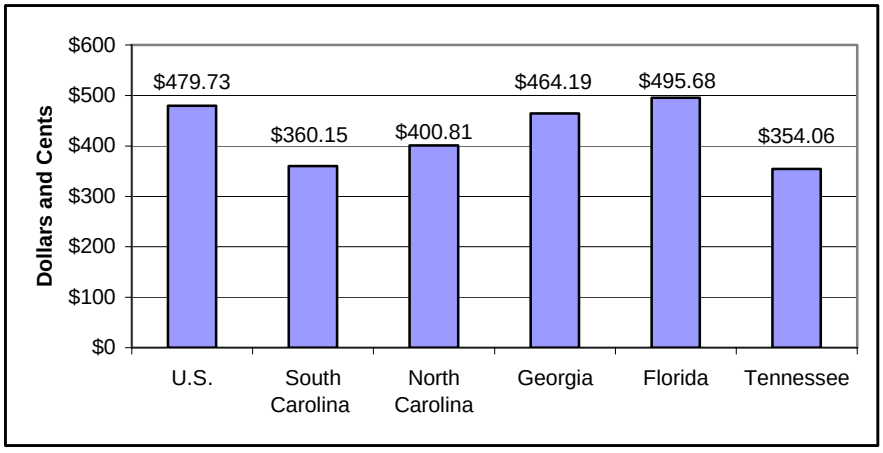
National and Regional Comparison of Commercial Average Monthly Consumption, 2003



Source: Energy Information Administration, *Electric Sales and Revenue Database*.

Figure 2.7

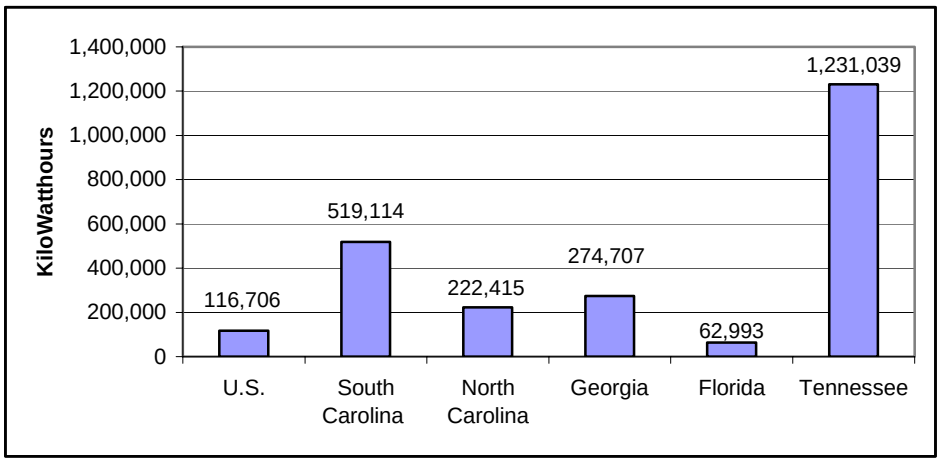
National and Regional Comparison of Commercial Average Monthly Bill, 2003



Source: Energy Information Administration, *Electric Sales and Revenue Database*.

Figure 2.8

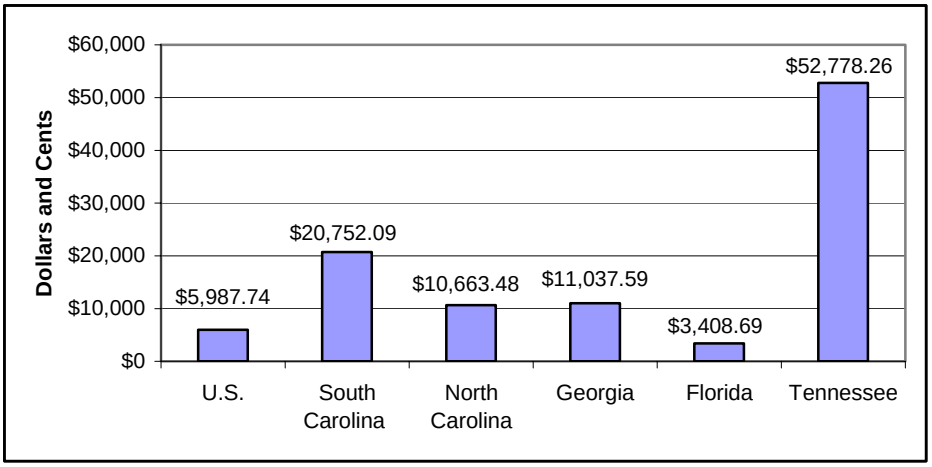
National and Regional Comparison of Industrial Average Monthly Consumption, 2003



Source: Energy Information Administration, *Electric Sales and Revenue Database*.

Figure 2.9

National and Regional Comparison of Industrial Average Monthly Bill, 2003



Source: Energy Information Administration, *Electric Sales and Revenue Database*.

South Carolina Electric Retail Sales to Consumers

South Carolina electric retail sales to ultimate consumers by sector increased by 91.4% from 1984 to 2004 in terms of million kilowatthours. During this period, South Carolina electric sales in the residential sector increased by 107.3%, sales in the commercial sector increased by 140.6%, and sales in the industrial sector increased by 69.2%. In 2004, the industrial sector comprised 39.9% of all electric sales in South Carolina, as compared with 28.8% for the United States. The residential sector accounted for 35.3% in South Carolina and 36.4% on the national level. The commercial sector had 24.8% of sales in South Carolina, and 34.6% in the United States.

Table 2.4

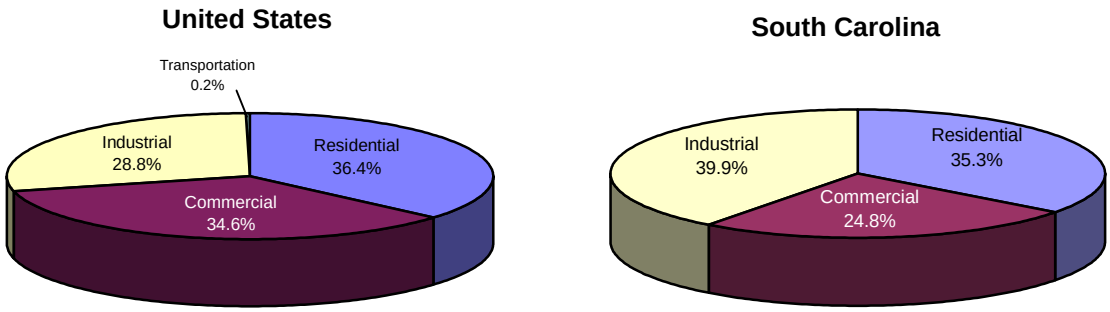
South Carolina Annual Sales to Ultimate Consumers by Sector
1984 – 2004
(Million Kilowatthours)

Year	Residential	Commercial	Industrial	Other*	TOTAL	Percent Change
1984	13,621	8,242	18,812	1,083	41,758	-0.42%
1985	13,654	8,715	19,000	1,138	42,507	1.79%
1986	16,155	9,786	22,734	694	49,369	16.14%
1987	18,643	10,340	24,225	699	53,907	9.19%
1988	16,963	10,656	24,098	735	52,452	-2.70%
1989	17,306	11,074	24,321	786	53,487	1.97%
1990	17,582	11,871	25,169	846	55,468	3.70%
1991	17,987	12,115	25,565	823	56,490	1.84%
1992	18,035	12,235	26,334	830	57,434	1.67%
1993	20,506	13,160	26,527	830	61,023	6.25%
1994	19,712	13,322	27,444	812	61,290	0.44%
1995	21,111	14,084	28,275	819	64,289	4.89%
1996	22,452	14,710	28,791	836	66,789	3.89%
1997	21,273	14,963	30,712	848	67,796	1.51%
1998	23,871	16,643	31,470	911	72,075	6.31%
1999	23,306	16,642	31,522	885	72,355	0.39%
2000	25,282	17,900	33,107	963	77,252	6.77%
2001	25,026	18,041	31,109	939	75,115	-2.77%
2002	26,655	18,251	31,820	933	77,659	3.39%
2003	26,633	18,296	31,326	928	77,183	-0.82%
2004	28,243	19,834	31,852	N/A	79,929	3.56%

* Includes sales for public street and highway lighting, other sales to public authorities, sales to railroads and railways, and interdepartmental sales. **In 2004, the data in this sector was prorated into the Commercial and Industrial sectors**.
Source: Energy Information Administration, *Electric Sales and Revenue* and *Electric Power Monthly*.

Figure 2.10

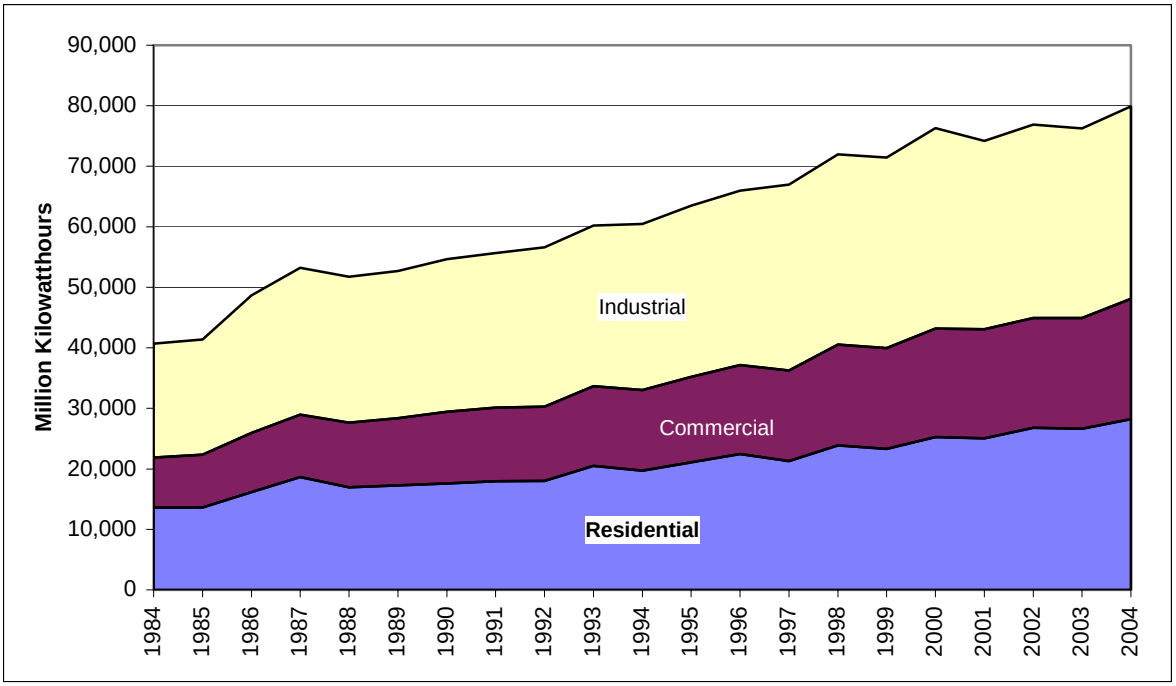
U.S. and South Carolina Electric Retail Sales to Ultimate Consumers, 2004



Source: Energy Information Administration, *Electric Power Monthly*.

Figure 2.11

South Carolina Annual Electric Retail Sales to Ultimate Consumers, 1984-2004



Source: Energy Information Administration, *Electric Sales and Revenue* and *Electric Power Monthly*.

Table 2.5

South Carolina Monthly Sales of Electricity to Ultimate Customers, 1993-2004
(Million Kilowatthours)

1993

Month	Residential	Commercial	Industrial	Other	TOTAL
Jan	1,817	1,001	1,986	63	4,867
Feb	1,688	956	2,017	63	4,724
Mar	1,760	990	2,081	67	4,898
Apr	1,380	929	2,147	63	4,519
May	1,194	1,021	2,233	65	4,513
Jun	1,649	1,185	2,416	77	5,327
Jul	2,329	1,320	2,240	80	5,969
Aug	2,295	1,365	2,418	77	6,155
Sep	2,001	1,300	2,363	79	5,743
Oct	1,371	1,112	2,256	68	4,807
Nov	1,316	955	2,230	62	4,563
Dec	1,706	1,026	2,140	66	4,938
TOTAL	20,506	13,160	26,527	830	61,023
%TOTAL	33.6%	21.6%	43.5%	1.4%	100.0%

1994

Month	Residential	Commercial	Industrial	Other	TOTAL
Jan	2,279	1,083	1,932	68	5,362
Feb	1,921	1,048	2,173	66	5,208
Mar	1,464	977	2,184	62	4,687
Apr	1,227	977	2,213	63	4,480
May	1,211	1,053	2,362	66	4,692
Jun	1,618	1,200	2,401	71	5,290
Jul	2,158	1,326	2,218	78	5,780
Aug	2,056	1,336	2,634	77	6,103
Sep	1,759	1,277	2,400	72	5,508
Oct	1,260	1,068	2,406	64	4,798
Nov	1,194	960	2,326	61	4,541
Dec	1,565	1,017	2,195	64	4,841
TOTAL	19,712	13,322	27,444	812	61,290
%TOTAL	32.2%	21.7%	44.8%	1.3%	100.0%

1995

Month	Residential	Commercial	Industrial	Other	TOTAL
Jan	2,000	1,079	2,184	65	5,328
Feb	1,974	1,072	2,159	66	5,271
Mar	1,611	1,023	2,278	60	4,972
Apr	1,256	1,029	2,323	65	4,673
May	1,324	1,120	2,486	68	4,998
Jun	1,753	1,275	2,438	71	5,537
Jul	2,160	1,375	2,403	77	6,015
Aug	2,394	1,444	2,557	78	6,473
Sep	1,962	1,366	2,422	74	5,824
Oct	1,370	1,173	2,475	69	5,087
Nov	1,427	1,055	2,335	63	4,880
Dec	1,880	1,073	2,215	63	5,231
TOTAL	21,111	14,084	28,275	819	64,289
%TOTAL	32.8%	21.9%	44.0%	1.3%	100.0%

1996

Month	Residential	Commercial	Industrial	Other	TOTAL
Jan	2,494	1,202	2,160	71	5,927
Feb	2,206	1,244	2,246	66	5,762
Mar	1,688	1,087	2,305	64	5,144
Apr	1,524	1,059	2,315	63	4,961
May	1,415	1,171	2,447	67	5,100
Jun	1,874	1,334	2,434	74	5,716
Jul	2,341	1,414	2,495	82	6,332
Aug	2,283	1,492	2,588	68	6,431
Sep	1,926	1,365	2,525	80	5,896
Oct	1,362	1,198	2,548	71	5,179
Nov	1,407	1,045	2,391	65	4,908
Dec	1,932	1,099	2,337	65	5,433
TOTAL	22,452	14,710	28,791	836	66,789
%TOTAL	33.6%	22.0%	43.1%	1.3%	100.0%

1997

Month	Residential	Commercial	Industrial	Other	TOTAL
Jan	2,157	1,211	2,356	70	5,794
Feb	1,950	1,143	2,368	67	5,528
Mar	1,420	1,041	2,394	63	4,918
Apr	1,314	1,092	2,523	67	4,996
May	1,292	1,131	2,610	65	5,098
Jun	1,518	1,271	2,685	70	5,544
Jul	2,304	1,494	2,649	82	6,529
Aug	2,298	1,521	2,777	81	6,677
Sep	2,070	1,474	2,692	79	6,315
Oct	1,482	1,292	2,616	74	5,464
Nov	1,472	1,089	2,588	64	5,213
Dec	1,996	1,204	2,454	66	5,720
TOTAL	21,273	14,963	30,712	848	67,796
%TOTAL	31.4%	22.1%	45.3%	1.3%	100.0%

1998

Month	Residential	Commercial	Industrial	Other	TOTAL
Jan	2,244	1,260	2,399	72	5,975
Feb	2,003	1,187	2,428	70	5,688
Mar	1,729	1,156	2,615	68	5,568
Apr	1,494	1,182	2,537	67	5,280
May	1,363	1,221	2,656	70	5,310
Jun	2,436	1,688	2,918	80	7,122
Jul	2,866	1,891	2,532	91	7,380
Aug	2,686	1,614	2,940	90	7,330
Sep	2,362	1,629	2,729	90	6,810
Oct	1,682	1,413	2,643	77	5,815
Nov	1,386	1,197	2,543	67	5,193
Dec	1,620	1,205	2,530	69	5,424
TOTAL	23,871	16,643	31,470	911	72,895
%TOTAL	32.7%	22.8%	43.2%	1.2%	100.0%

1999

Month	Residential	Commercial	Industrial	Other	TOTAL
Jan	2,450	1,346	2,296	69	6,161
Feb	1,651	1,133	2,409	64	5,257
Mar	1,884	1,206	2,524	64	5,678
Apr	1,556	1,256	2,541	70	5,423
May	1,495	1,310	2,678	70	5,553
Jun	1,881	1,473	2,769	76	6,199
Jul	2,355	1,615	2,706	82	6,758
Aug	2,909	1,793	2,981	89	7,772
Sep	2,325	1,634	2,697	86	6,742
Oct	1,485	1,369	2,689	76	5,619
Nov	1,454	1,232	2,641	67	5,394
Dec	1,861	1,275	2,591	72	5,799
TOTAL	23,306	16,642	31,522	885	72,355
%TOTAL	32.2%	23.0%	43.6%	1.2%	100.0%

2000

Month	Residential	Commercial	Industrial	Other	TOTAL
Jan	2,364	1,351	2,715	75	6,505
Feb	2,483	1,352	2,438	75	6,348
Mar	1,945	1,480	2,852	87	6,364
Apr	1,414	1,260	2,695	73	5,442
May	1,640	1,417	2,895	76	6,028
Jun	2,388	1,741	2,841	89	7,059
Jul	2,742	1,717	2,845	91	7,395
Aug	2,566	1,762	2,994	87	7,409
Sep	2,201	1,640	2,866	87	6,794
Oct	1,604	1,444	2,768	80	5,896
Nov	1,506	1,310	2,622	70	5,508
Dec	2,429	1,426	2,576	73	6,504
TOTAL	25,282	17,900	33,107	963	77,252
%TOTAL	32.7%	23.2%	42.9%	1.2%	100.0%

2001

Month	Residential	Commercial	Industrial	Other	TOTAL
Jan	3,097	1,516	2,475	80	7,168
Feb	2,191	1,369	2,557	72	6,189
Mar	1,747	1,248	2,554	83	5,632
Apr	1,712	1,353	2,606	72	5,743
May	1,635	1,465	2,679	76	5,855
Jun	2,106	1,643	2,640	82	6,471
Jul	2,532	1,760	2,620	86	6,998
Aug	2,663	1,811	2,733	83	7,290
Sep	2,436	1,734	2,711	86	6,967
Oct	1,608	1,499	2,647	78	5,832
Nov	1,584	1,330	2,484	69	5,467
Dec	1,717	1,313	2,424	71	5,525
TOTAL	25,028	18,041	31,130	938	75,137
%TOTAL	33.3%	24.0%	41.4%	1.2%	100.0%

2002

Month	Residential	Commercial	Industrial	Other	TOTAL
Jan	2,621	1,417	2,407	73	6,518
Feb	2,035	1,306	2,484	72	5,897
Mar	1,965	1,266	2,454	69	5,754
Apr	1,634	1,356	2,636	72	5,698
May	1,804	1,512	2,743	79	6,138
Jun	2,231	1,619	2,758	80	6,688
Jul	2,764	1,792	2,788	88	7,432
Aug	2,968	1,850	2,892	85	7,795
Sep	2,575	1,778	2,793	87	7,233
Oct	1,981	1,590	2,709	82	6,362
Nov	1,686	1,361	2,630	74	5,751
Dec	2,391	1,404	2,526	72	6,393
TOTAL	26,655	18,251	31,820	933	77,659
%TOTAL	34.3%	23.5%	41.0%	1.2%	100.0%

2003

Month	Residential	Commercial	Industrial	Other	TOTAL
Jan	2,772	1,453	2,493	80	6,798
Feb	2,699	1,431	2,460	81	6,671
Mar	2,023	1,336	2,525	74	5,958
Apr	1,538	1,331	2,595	75	5,539
May	1,734	1,497	2,712	73	6,016
Jun	2,084	1,593	2,723	75	6,475
Jul	2,827	1,847	2,653	85	7,412
Aug	2,772	1,834	2,871	84	7,561
Sep	2,499	1,678	2,629	83	6,889
Oct	1,701	1,515	2,641	76	5,933
Nov	1,510	1,347	2,566	72	5,495
Dec	2,474	1,434	2,458	70	6,436
TOTAL	26,633	18,296	31,326	928	77,183
%TOTAL	34.5%	23.7%	40.6%	1.2%	100.0%

2004

Month	Residential	Commercial	Industrial	TOTAL
Jan	2,921	1,573	2,418	6,912
Feb	2,723	1,536	2,424	6,683
Mar	2,255	1,449	2,568	6,272
Apr	1,653	1,389	2,563	5,605
May	1,984	1,736	2,795	6,515
Jun	2,653	1,832	2,687	7,172
Jul	3,078	2,039	2,800	7,917
Aug	2,755	1,877	2,910	7,542
Sep	2,304	1,766	2,705	6,775
Oct	1,766	1,627	2,709	6,102
Nov	1,688	1,456	2,694	5,838
Dec	2,463	1,554	2,579	6,596
TOTAL	28,243	19,834	31,852	79,929
%TOTAL	35.3%	24.8%	39.9%	100.0%

Source: Energy Information Administration, *Electric Power Monthly*.

South Carolina Residential Statistics

The number of South Carolina residential electric customers served by investor-owned utilities increased by 73.1% (or 517,860) new customers from 1982 to 2002. Sales to residential customers increased by 79.6%, and revenues increased by $669.2 million during the same period. The average annual electric bill for South Carolina residential electric customers increased by 62.3% or $432.19 from 1982 to 2002, as compared with an increase of 52.4% or $294.58 on the national level. The average annual electric bill for South Carolina residential electric customers from all utilities (municipal, cooperatives, investor-owned) in 2002 was $1,126.54. The average electric rate for South Carolina residential customers increased by 31.5% or $0.0182 during the same period, with the U.S. average increasing by 29.5% or $0.0201. From 1982 to 2002 the kWh per customer increased by 23.5% in South Carolina compared with 17.6% on the national level.

Table 2.6

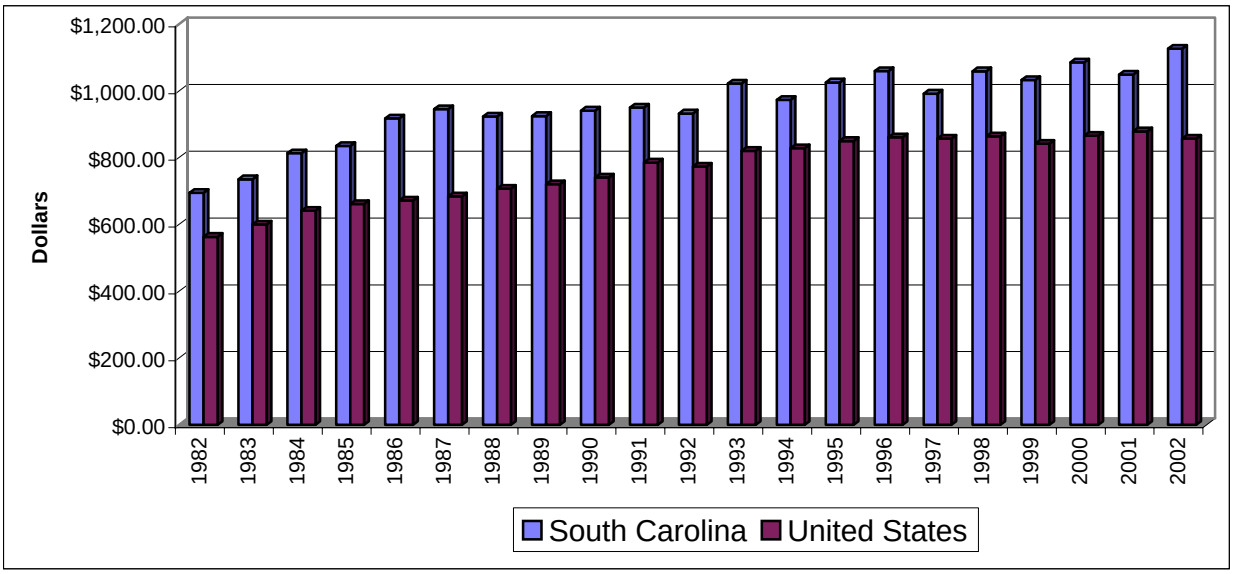
Selected South Carolina and U.S. Residential Statistics for Investor-Owned Electric Utilities, 1982-2002

Year	Number of Customers	Sales (Million kWh)	Revenue (Million dollars)	kWh per Customer		Average Rate (Cents per kWh)		Average Annual Electric Bill	
	S.C.	S.C.	S.C.	S.C.	U.S.	S.C.	U.S.	S.C.	U.S.
1982	708,908	8,520	492.1	12,019	8,261	5.77	6.81	$694.17	$562.54
1983	721,695	8,845	530.5	12,256	8,379	6.00	7.15	$735.08	$599.44
1984	739,330	9,065	601.3	12,262	8,500	6.63	7.53	$813.30	$640.47
1985	758,676	9,082	633.8	11,971	8,487	6.98	7.79	$835.47	$661.10
1986	778,637	9,957	714.7	12,788	8,627	7.18	7.78	$917.89	$671.60
1987	794,815	10,366	751.6	13,042	8,816	7.25	7.75	$945.65	$683.65
1988	811,084	10,435	749.1	12,866	9,082	7.18	7.78	$923.59	$706.82
1989	827,587	10,577	764.3	12,796	9,063	7.23	7.95	$924.68	$720.24
1990	841,142	11,008	791.6	13,086	9,056	7.19	8.17	$941.09	$740.04
1991	855,733	11,246	812.9	13,142	9,280	7.23	8.46	$949.95	$784.80
1992	868,870	11,309	810.2	13,016	8,949	7.16	8.63	$932.53	$772.58
1993	881,858	12,304	901.0	13,953	9,394	7.32	8.73	$1,021.67	$820.39
1994	896,164	11,638	872.1	12,985	9,378	7.49	8.83	$973.17	$828.17
1995	910,392	12,558	933.4	13,794	9,583	7.43	8.87	$1,025.30	$849.94
1996	927,803	13,033	982.7	14,047	9,713	7.54	8.86	$1,059.12	$860.85
1997	945,107	12,448	934.7	13,171	9,591	7.53	8.94	$991.81	$857.27
1998	963,820	13,494	1,019.6	14,406	9,915	7.55	8.71	$1,058.72	$863.95
1999	982,055	13,540	1,014.0	13,788	9,897	7.49	8.50	$1,032.57	$841.71
2000	997,084	14,407	1,081.8	14,449	10,180	7.51	8.50	$1,084.98	$865.50
2001	1,175,668	13,906	1,065.0	13,695	9,727	7.66	9.03	$1,048.99	$878.63
2002	1,226,768	15,298	1,161.3	14,838	9,717	7.59	8.82	$1,126.36	$857.12

Source: Edison Electric Institute, *Statistical Yearbook of the Electric Utility Industry*.

Figure 2.12

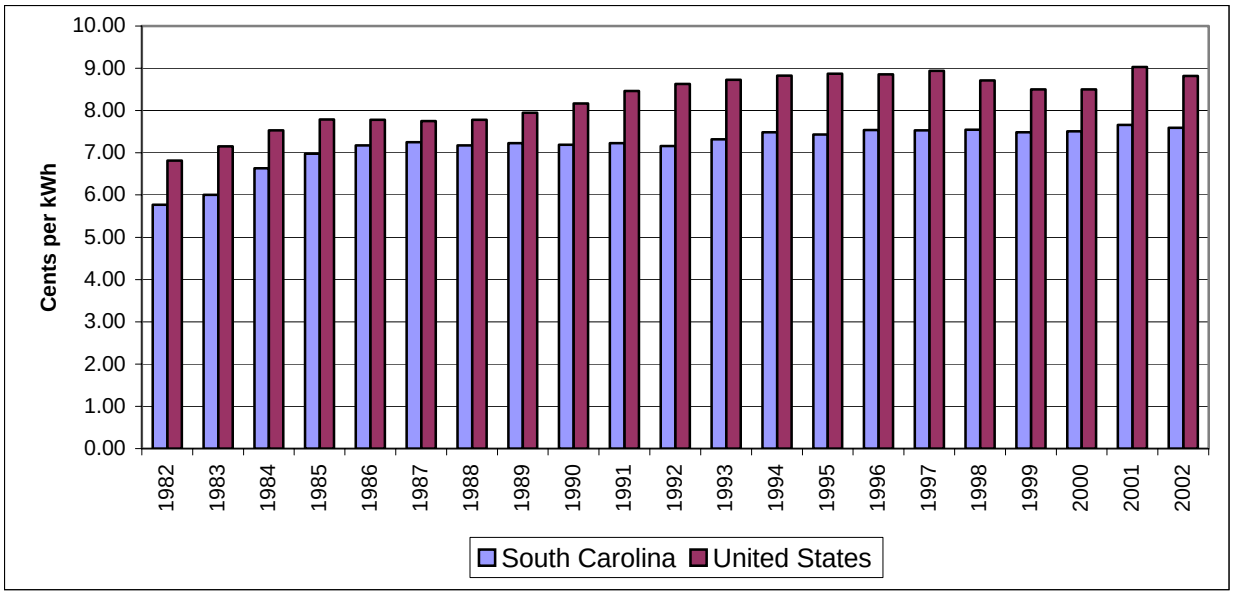
South Carolina and U.S. Annual Average Residential Electric Bill for Investor-owned Electric Utilities, 1982-2002



Sources: South Carolina Public Service Commission; Edison Electric Institute, *Statistical Yearbook of the Electric Utility Industry*.

Figure 2.13

South Carolina and U.S. Annual Average Residential Electric Rates per Investor-owned Electric Utilities, 1982-2002



Sources: Edison Electric Institute, *Statistical Yearbook of the Electric Utility Industry*.

Table 2.7

Class of Ownership, Number of Ultimate Consumers, Revenue, Sales, and Average Rate per Kilowatthour for the Residential Sector by South Carolina Electric Utilities, 2003

Electric Utility	Class of Ownership	Number of Consumers	Revenue (Thousand dollars)	Sales (Thousand kWH)	Average Rate per kWh (Cents)
Abbeville, City of	Municipal	3,101	$3,019	31,672	9.53
Aiken Electric Coop Inc	Cooperative	37,854	$48,307	540,508	8.94
Bamberg Board of Public Works	Municipal	1,465	$1,220	19,375	6.30
Bennettsville, City of	Municipal	4,225	$4,256	54,750	7.77
Berkeley Electric Coop Inc	Cooperative	72,930	$86,357	1,068,796	8.08
Black River Electric Coop, Inc	Cooperative	24,680	$31,617	421,209	7.51
Blue Ridge Electric Coop Inc	Cooperative	54,877	$62,531	670,373	9.33
Broad River Electric Coop, Inc	Cooperative	17,861	$21,030	233,952	8.99
Camden, City of	Municipal	9,411	$7,411	96,950	7.64
Carolina Power & Light Co*	Private	136,620	$166,912	2,061,811	8.10
Clinton Combined Utility Sys	Municipal	3,635	$3,459	34,992	9.89
Coastal Electric Coop, Inc	Cooperative	9,936	$13,269	141,831	9.36
Due West, City of	Municipal	316	$412	3,296	12.50
Duke Energy Corporation	Private	413,450	$395,926	5,693,569	6.95
Easley Combined Utility System	Municipal	10,873	$12,308	135,717	9.07
Edisto Electric Coop, Inc	Cooperative	14,774	$20,559	230,723	8.91
Fairfield Electric Coop, Inc	Cooperative	19,942	$24,621	307,278	8.01
Gaffney, City of	Municipal	6,056	$5,640	66,175	8.52
Georgetown, City of	Municipal	3,780	$3,679	49,860	7.38
Greenwood Commissioners PW	Municipal	10,967	$6,274	108,315	5.79
Greer Commission of Public Wks	Municipal	10,733	$10,973	121,108	9.06
Haywood Electric Member Coop**	Cooperative	11	$4	35	11.43
Horry Electric Coop Inc	Cooperative	42,398	$54,790	644,266	8.50
Laurens, City of	Cooperative	4,381	$4,074	567,296	8.56
Laurens Electric Coop, Inc	Municipal	43,004	$48,586	41,189	9.89
Little River Electric Coop Inc	Cooperative	11,327	$12,937	143,264	9.03
Lockhart Power Co	Private	5,169	$5,370	66,567	8.07
Lynches River Elec Coop, Inc	Cooperative	18,936	$20,535	242,597	8.46
Marlboro Electric Coop, Inc	Cooperative	5,348	$7,742	87,323	8.87
McCormick, Town of	Municipal	878	$949	11,529	8.23
Mid-Carolina Electric Coop Inc	Cooperative	38,900	$50,735	619,101	8.19
Newberry, City of	Cooperative	3,937	$3,883	150,215	7.40
Newberry Electric Coop, Inc	Municipal	11,121	$11,109	46,673	8.32
Orangeburg, City of	Municipal	20,151	$17,484	285,000	6.13
Palmetto Electric Coop Inc	Cooperative	48,227	$55,171	798,424	6.91
Pee Dee Electric Coop, Inc	Cooperative	27,486	$37,525	440,786	8.51
Prosperity, Town of	Municipal	561	$505	6,646	7.60
Rock Hill, City of	Municipal	23,222	$24,168	275,698	8.77
Santee Electric Coop, Inc	State	39,983	$51,084	617,862	6.98
Seneca, City of	Cooperative	4,788	$4,381	54,817	8.27
South Carolina Electric & Gas	Municipal	481,380	$604,104	6,998,139	7.99
Santee Cooper	Private	112,213	$102,213	1,464,246	8.63
Tri-County Electric Coop, Inc	Cooperative	16,758	$22,188	30,500	9.20
Union, City of	Municipal	6,006	$6,857	241,073	9.86
Westminster, City of	Municipal	1,404	$1,345	69,570	11.03
Winnsboro, Town of	Municipal	3,396	$2,683	12,192	8.80
York Electric Coop Inc	Cooperative	29,451	$36,980	414,371	8.92
Total	**47**	**1,867,922**	**$2,117,182**	**26,421,639**	**8.01**

*A subsidiary of Progress Energy. **A North Carolina-based electric cooperative.
Source: Energy Information Administration, *Electricity Database File*.

Table 2.8

Class of Ownership, Number of Ultimate Consumers, Revenue, Sales, and Average Rate per Kilowatthour for the Commercial Sector by South Carolina Electric Utilities, 2003

Electric Utility	Class of Ownership	Number of Consumers	Revenue (Thousand Dollars)	Sales (Thousand kWh)	Average Rate per kWh (Cents)
Abbeville, City of	Municipal	495	$2,428	27,835	8.72
Aiken Electric Coop Inc	Cooperative	2,508	$8,233	114,986	7.16
Bamberg Board of Public Works	Municipal	363	$1,277	21,004	6.08
Bennettsville, City of	Municipal	530	$3,136	40,335	7.77
Berkeley Electric Coop Inc	Cooperative	7,721	$13,431	166,685	8.06
Black River Electric Coop, Inc	Cooperative	3,369	$7,199	90,040	8.00
Blue Ridge Electric Coop Inc	Cooperative	3,754	$10,662	127,170	8.38
Broad River Electric Coop, Inc	Cooperative	617	$2,079	23,906	8.70
Camden, City of	Municipal	1,442	$5,286	66,895	7.90
Carolina Power & Light Co*	Investor-owned	31,395	$127,101	1,784,958	7.12
Clinton Combined Utility Sys	Municipal	605	$3,749	41,131	9.11
Coastal Electric Coop, Inc	Cooperative	848	$1,773	19,017	9.32
Due West, City of	Municipal	31	$390	8,644	4.51
Duke Energy Corporation	Investor-owned	80,153	$309,908	5,172,087	5.99
Easley Combined Utility System	Municipal	1,608	$10,528	121,867	8.64
Edisto Electric Coop, Inc	Cooperative	4,041	$3,716	40,092	9.27
Fairfield Electric Coop, Inc	Cooperative	1,002	$4,943	66,188	7.47
Gaffney, City of	Municipal	1,175	$8,510	92,171	9.23
Georgetown, City of	Municipal	1,164	$7,108	85,328	8.33
Greenwood Commissioners-PW	Municipal	2,278	$3,391	51,976	6.52
Greer Commission of Public Wks	Municipal	3,607	$9,150	116,294	7.87
Haywood Electric Member Corp**	Cooperative	3	$5	56	8.93
Horry Electric Coop Inc	Cooperative	6,296	$11,465	138,700	8.27
Laurens Electric Coop, Inc	Cooperative	3,335	$10,634	114,812	9.26
Laurens, City of	Municipal	836	$3,863	51,615	7.48
Little River Electric Coop Inc	Cooperative	1,906	$3,299	36,479	9.04
Lockhart Power Co	Investor-owned	1,132	$1,709	19,399	8.81
Lynches River Elec Coop, Inc	Cooperative	873	$3,269	38,979	8.39
Marlboro Electric Coop, Inc	Cooperative	1,150	$1,971	24,165	8.16
McCormick, Town of	Municipal	194	$722	7,747	9.32
Mid-Carolina Electric Coop Inc	Cooperative	4,311	$15,187	198,533	7.65
Newberry Electric Coop, Inc	Cooperative	541	$748	9,928	7.53
Newberry, City of	Municipal	829	$4,963	61,311	8.09
Orangeburg, City of	Municipal	3,263	$6,750	104,000	6.49
Palmetto Electric Coop Inc	Cooperative	9,137	$30,368	446,276	6.80
Pee Dee Electric Coop, Inc	Cooperative	1,674	$5,013	60,538	8.28
Prosperity, Town of	Municipal	117	$220	2,745	8.01
Rock Hill, City of	Municipal	3,049	$30,353	397,521	7.64
Santee Cooper	State	2,451	$7,407	105,643	6.17
Santee Electric Coop, Inc	Cooperative	1,031	$5,239	65,448	7.01
Seneca, City of	Municipal	82,588	$496,643	7,122,007	8.00
South Carolina Electric & Gas	Investor-owned	25,610	$111,040	1,799,970	6.97
Tri-County Electric Coop, Inc	Cooperative	629	$1,214	17,700	7.90
Union, City of	Municipal	658	$3,543	44,834	9.21
Westminster, City of	Municipal	1,051	$5,399	58,599	9.27
Winnsboro, Town of	Municipal	240	$1,477	15,933	6.86
York Electric Coop Inc	Cooperative	2,918	$9,627	114,582	8.40
Total	**47**	**304,528**	**$1,316,126**	**19,336,129**	**6.81**

*A subsidiary of Progress Energy. **A North Carolina-based electric cooperative.
Source: Energy Information Administration, *Electricity Database File*.

Table 2.9

Class of Ownership, Number of Ultimate Consumers, Revenue, Sales, and Average Rate per Kilowatthour for the Industrial Sector by South Carolina Electric Utilities, 2003

Electric Utility	Class of Ownership	Number of Consumers	Revenue (Thousand Dollars)	Sales (Thousand kWh)	Average Rate per kWh (Cents)
Aiken Electric Coop Inc	Cooperative	26	$7,040	163,469	4.31
Bamberg Board of Public Works	Municipal	5	$369	7,944	4.65
Berkeley Electric Coop Inc	Cooperative	250	$9,637	176,851	5.45
Black River Electric Coop, Inc	Cooperative	18	$6,411	127,806	5.02
Blue Ridge Electric Coop Inc	Cooperative	20	$2,790	57,601	4.84
Broad River Electric Coop, Inc	Cooperative	3	$1,156	16,682	6.93
Carolina Power & Light Co*	Investor-owned	781	$155,723	3,222,888	4.83
Clinton Combined Utility Sys	Municipal	6	$2,261	34,610	6.53
Due West, City of	Municipal	1	$10	103	9.71
Duke Energy Corporation	Investor-owned	1,866	$371,185	9,872,667	3.76
Edisto Electric Coop, Inc	Cooperative	15	$1,147	19,011	6.03
Fairfield Electric Coop, Inc	Cooperative	11	$6,595	164,408	4.01
Gaffney, City of	Municipal	27	$1,566	33,905	4.62
Greenwood Commissioners-PW	Municipal	176	$5,668	121,902	4.65
Horry Electric Coop Inc	Cooperative	6	$1,815	27,361	6.63
Laurens Electric Coop, Inc	Cooperative	29	$8,803	156,366	5.63
Lockhart Power Co	Investor-owned	11	$5,091	113,488	4.49
Lynches River Elec Coop, Inc	Cooperative	11	$3,672	69,041	5.32
Marlboro Electric Coop, Inc	Cooperative	6	$20,993	616,608	3.40
Mid-Carolina Electric Coop Inc	Cooperative	5	$1,078	23,036	4.68
Newberry Electric Coop, Inc	Cooperative	80	$5,294	94,542	5.60
Newberry, City of	Municipal	14	$3,947	64,915	6.08
Orangeburg, City of	Municipal	344	$22,347	450,000	4.97
Palmetto Electric Coop Inc	Cooperative	8	$2,677	55,613	4.81
Pee Dee Electric Coop, Inc	Cooperative	21	$15,570	369,414	4.21
Santee Cooper	State	32	$275,286	7,978,576	3.45
Santee Electric Coop, Inc	Cooperative	14	$24,038	583,553	4.12
Seneca, City of	Municipal	3	$1,556	32,530	4.78
South Carolina Electric & Gas	Investor-owned	1,073	$281,056	6,547,908	4.29
Tri-County Electric Coop, Inc	Cooperative	85	$78	654	11.93
Union, City of	Municipal	14	$709	8,318	8.52
Winnsboro, Town of	Municipal	37	$2,272	34,000	6.68
York Electric Coop Inc	Cooperative	26	$3,262	50,560	6.45
Total	**33**	**5,024**	**$1,251,102**	**31,296,330**	**4.00**

*A subsidiary of Progress Energy.
Source: Energy Information Administration, *Electricity Database File*.

Table 2.10

Class of Ownership, Number of Ultimate Consumers, Revenue, Sales, and Average Rate per Kilowatthour for All Sectors by South Carolina Electric Utilities, 2003

Electric Utility	Class of Ownership	Number of Consumers	Revenue (Thousand dollars)	Sales (Thousand kWH)	Average Rate per kWh (Cents)
Abbeville, City of	Municipal	3,596	$5,447	59,507	9.15
Aiken Electric Coop Inc	Cooperative	40,388	$63,580	818,963	7.76
Bamberg Board of Public Works	Municipal	1,833	$2,866	48,323	5.93
Bennettsville, City of	Municipal	4,755	$7,392	95,085	7.77
Berkeley Electric Coop Inc	Cooperative	80,901	$109,425	1,412,332	7.75
Black River Electric Coop, Inc	Cooperative	28,067	$45,227	639,055	7.08
Blue Ridge Electric Coop Inc	Cooperative	58,651	$75,983	855,144	8.89
Broad River Electric Coop, Inc	Cooperative	18,481	$24,265	274,540	8.84
Camden, City of	Municipal	10,853	$12,697	163,845	7.75
Carolina Power & Light Co*	Investor-owned	168,796	$449,736	7,069,657	6.36
Clinton Combined Utility Sys	Municipal	4,246	$9,469	110,733	8.55
Coastal Electric Coop, Inc	Cooperative	10,784	$15,042	160,848	9.35
Due West, City of	Municipal	348	$812	12,043	6.74
Duke Energy Corporation	Investor-owned	495,469	$1,077,019	20,738,323	5.19
Easley Combined Utility System	Municipal	12,481	$22,836	257,584	8.87
Edisto Electric Coop, Inc	Cooperative	18,830	$25,422	289,826	8.77
Fairfield Electric Coop, Inc	Cooperative	20,955	$36,159	537,874	6.72
Gaffney, City of	Municipal	7,258	$15,716	192,251	8.17
Georgetown, City of	Municipal	4,944	$10,787	135,188	7.98
Greenwood Commissioners-PW	Municipal	13,421	$15,333	282,193	5.43
Greer Commission of Public Wks	Municipal	14,340	$20,123	237,402	8.48
Haywood Electric Member Coop**	Cooperative	14	$9	91	9.89
Horry Electric Coop Inc	Cooperative	48,700	$68,070	810,327	8.40
Laurens, City of	Cooperative	46,368	$68,023	838,474	8.11
Laurens Electric Coop, Inc	Municipal	5,217	$7,937	92,804	8.55
Little River Electric Coop Inc	Cooperative	13,233	$16,236	179,743	9.03
Lockhart Power Co	Investor-owned	6,312	$12,170	199,454	6.10
Lynches River Elec Coop, Inc	Cooperative	19,820	$27,476	350,617	7.84
Marlboro Electric Coop, Inc	Cooperative	6,504	$30,706	728,096	4.22
McCormick, Town of	Municipal	1,072	$1,671	19,276	8.67
Mid-Carolina Electric Coop Inc	Cooperative	43,216	$67,000	840,670	7.97
Newberry, City of	Cooperative	11,742	$17,151	254,685	6.73
Newberry Electric Coop, Inc	Municipal	4,780	$12,793	172,899	7.40
Orangeburg, City of	Municipal	23,758	$46,581	839,000	5.55
Palmetto Electric Coop Inc	Cooperative	57,372	$88,216	1,300,313	6.78
Pee Dee Electric Coop, Inc	Cooperative	29,181	$58,108	870,738	6.67
Prosperity, Town of	Municipal	678	$725	9,391	7.72
Rock Hill, City of	Municipal	26,271	$54,521	673,219	8.10
Santee Electric Coop, Inc	State	137,855	$488,539	11,242,792	4.35
Seneca, City of	Cooperative	42,448	$82,529	1,307,058	6.31
South Carolina Electric & Gas	Municipal	5,822	$11,176	152,795	7.31
Santee Cooper	Investor-owned	565,041	$1,381,803	20,668,054	6.69
Tri-County Electric Coop, Inc	Cooperative	17,501	$25,809	286,561	9.01
Union, City of	Municipal	7,071	$12,965	136,487	9.50
Westminster, City of	Municipal	1,644	$2,822	28,125	10.03
Winnsboro, Town of	Municipal	4,062	$6,169	82,200	7.50
York Electric Coop Inc	Cooperative	32,395	$49,869	579,513	8.61
Total	**47**	**2,177,474**	**$4,684,410**	**77,054,098**	**6.08**

*A subsidiary of Progress Energy. **A North Carolina-based electric cooperative.
Source: Energy Information Administration, *Electricity Database File*.

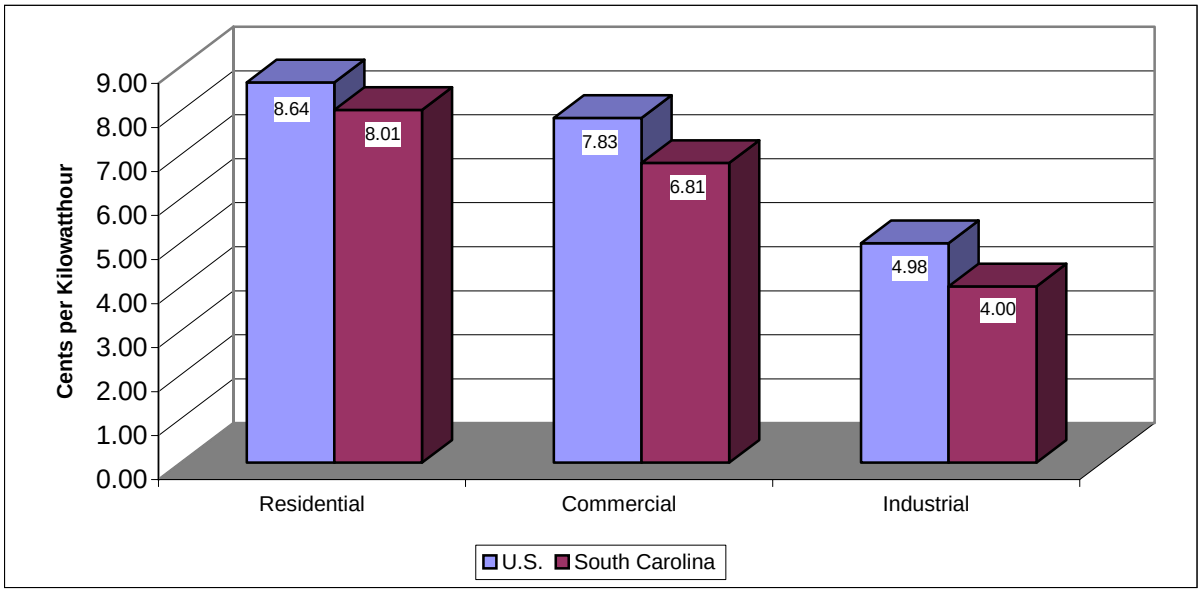
Table 2.11

Number of, Sales to, Revenue from Sales, and Average Rate per Kilowatthour to Ultimate Electric Consumers in South Carolina by Sector, 2003				
Sector	**Number of Consumers**	**Sales (Million kWh)**	**Revenue from Sales (Thousand Dollars)**	**Average Revenue per kWh (Cents)**
Residential	1,867,922	$26,422	$2,117,182	8.01
Commercial	304,528	$19,336	$1,316,126	6.81
Industrial	5,024	$31,296	$1,251,102	4.00
TOTAL	**2,177,474**	**$77,054**	**$4,684,410**	**6.08**

Source: Energy Information Administration, *Electric Sales and Revenue Database File*.

Figure 2.14

U.S. and South Carolina Comparison of Electric Utility Average Rate per kWh by Sector, 2003



Source: Energy Information Administration, *Electric Sales and Revenue Database File*.

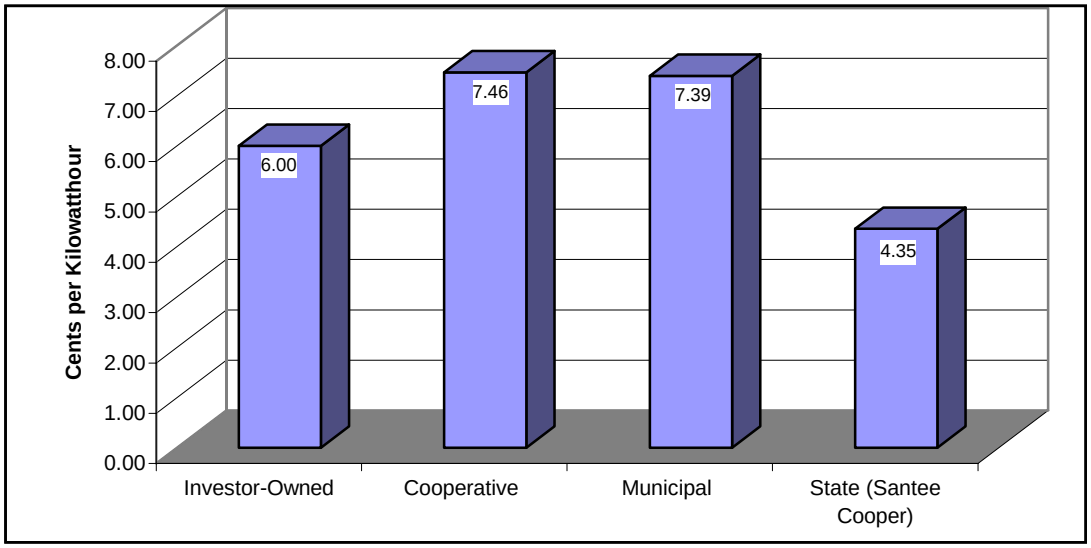
Table 2.12

Number of, Sales to, Revenue from Sales, and Average Rate per Kilowatthour to Ultimate Consumers in South Carolina by Class of Ownership, 2003				
Class	**Number of Consumers**	**Sales (Million kWh)**	**Revenue from Sales (Thousand Dollars)**	**Average Rate per kWh (Cents)**
Investor-owned	1,235,618	48,676	2,920,728	6.00
Cooperative	645,551	13,335	994,305	7.46
Municipal	158,450	3,800	280,838	7.39
Santee Cooper--state-owned	137,855	11,243	488,539	4.35
Totals	2,177,474	77,054	4,684,410	6.08

Source: Energy Information Administration, *Electricity Database File*.

Figure 2.15

South Carolina Average Electric Rate per kWh by Class of Ownership, 2003



Source: Energy Information Administration, *Electricity Database File*.

Table 2.13

Top Ten Utilities Ranked by Number of Customers per Economic Sector, 2003

Residential

Utility	Number of Customers	Five-year Percentage Change
South Carolina Electric & Gas Co	481,380	7.9%
Duke Energy Corporation	413,450	3.8%
Carolina Power & Light Co	136,620	3.1%
Santee Cooper	112,213	10.8%
Berkeley Electric Coop, Inc	72,930	32.1%
Blue Ridge Electric Coop, Inc	54,877	11.0%
Palmetto Electric Coop, Inc	48,227	22.6%
Laurens Electric Coop, Inc	43,004	14.2%
Horry Electric Coop, Inc	42,398	21.2%
Santee Electric Coop, Inc	39,983	6.9%

Commercial

Utility	Number of Customers	Five-year Percentage Change
South Carolina Electric & Gas	82,588	14.6%
Duke Energy Corporation	80,153	10.9%
Carolina Power & Light Co	31,395	8.4%
Santee Cooper	25,610	12.9%
Palmetto Electric Coop, Inc	9,137	35.4%
Berkeley Electric Coop, Inc	7,721	41.6%
Horry Electric Coop, Inc	6,296	19.0%
Mid-Carolina Electric Coop, Inc	4,311	-11.8%
Edisto Electric Coop, Inc	4,041	16.7%
Blue Ridge Electric Coop, Inc	3,754	16.4%

Industrial

Utility	Number of Customers	Five-year Percentage Change
Duke Energy Corporation	1,073	-11.2%
South Carolina Electric & Gas	781	17.1%
Carolina Power & Light Co	344	-6.4%
Orangeburg, City of	250	258.3%
Berkeley Electric Coop, Inc	176	60.3%
Greenwood Commissioners-PW	85	-28.5%
Tri-County Electric Coop, Inc	80	N/A
Newberry Electric Coop, Inc	37	515.4%
Winnsboro, Town of	32	N/A
Santee Cooper	32	-8.6%

Energy Information Administration, *Electric Sales and Revenue* Database.

Table 2.14

Top Ten Utilities Ranked by Retail Sales (Thousand kWh) per Economic Sector

Residential

Utility	Sales (Thousand kWh)	Five-year Percentage Change
South Carolina Electric & Gas Co	6,998,139	11.6%
Duke Energy Corporation	5,693,569	7.3%
Carolina Power & Light Co	2,061,811	8.6%
Santee Cooper	1,464,246	17.3%
Berkeley Electric Coop, Inc	1,068,796	16.5%
Palmetto Electric Coop, Inc	798,424	23.4%
Blue Ridge Electric Coop,, Inc	670,373	14.5%
Horry Electric Coop, Inc	644,266	25.3%
Mid-Carolina Electric Coop, Inc	619,101	12.3%
Santee Electric Coop, Inc	617,862	8.4%

Commercial

Utility	Sales (Thousand kWh)	Five-year Percentage Change
South Carolina Electric & Gas Co	7,122,007	19.7%
Duke Energy Corporation	5,172,087	11.0%
Santee Cooper	1,799,970	15.1%
Carolina Power & Light Co	1,784,958	14.2%
Rock Hill, City of	446,276	42.7%
Palmetto Electric Coop, Inc	397,521	113.3%
Mid-Carolina Electric Coop, Inc	198,533	16.5%
Blue Ridge Electric Coop, Inc	166,685	38.7%
Horry Electric Coop, Inc	138,700	32.8%
Berkeley Electric Coop, Inc	127,170	14.5%

Industrial

Utility	Sales (Thousand kWh)	Five-year Percentage Change
Duke Energy Corporation	9,872,667	-18.2%
Santee Cooper	7,978,576	11.1%
South Carolina Electric & Gas	6,547,908	6.6%
Carolina Power & Light Co	3,222,888	-4.0%
Marlboro Electric Coop, Inc	616,608	18.5%
Santee Electric Coop, Inc	583,553	31.4%
Orangeburg, City of	450,000	13.9%
Pee Dee Electric Coop, Inc	369,414	7.1%
Berkeley Electric Coop, Inc	176,851	49.3%
Fairfield Electric Coop, Inc	164,408	-34.9%

Source: Energy Information Administration, *Electric Sales and Revenue* Database.

South Carolina Electric Utility Emissions Data

A variety of gases and particulates are formed when fossil fuels are burned in the production of electricity. Among the gases emitted during such burning are sulfur dioxide (SO_2), nitrogen oxides (NO_X), and carbon dioxide (CO_2). If these gases are not captured by some type of pollution control equipment, they are released into the atmosphere. South Carolina ranked 19th in the nation in the emissions levels of sulfur dioxide, 31st in nitrogen oxide emissions, and 38th in carbon dioxide emissions. Estimated emissions from all fossil-fueled steam-electric generating units at South Carolina electric utilities increased by 61.6% from 1990 to 2002.

In 2002, carbon dioxide from coal-fired plants accounted for 99.2% of emissions from fossil-fueled generating units in South Carolina. Consequently, the pollution control equipment used most often at the generation units in the electric utility plants in South Carolina is particulate collection, which is mainly centered on coal combustion because of the large percentage of ash that coal contains. This particulate matter from coal is most frequently removed from the combustion gases by either filtering in a baghouse, or in an electrostatic precipitator. In this case the particulates are given an electric charge and collected. Figure 2.10 provides a map showing the location of the coal-burning power plants in South Carolina.

Table 2.15

Estimated Emissions from Fossil-Fueled Steam-Electric Generation Units at all South Carolina Electric Utilities, 1990-2002 (Thousand short tons)

Year	Sulfur Dioxide	Percent Change	Nitrogen Oxides	Percent Change	Carbon Dioxide	Percent Change	Total Emissions
1990	175	N/A	80	N/A	24,759	N/A	25,015
1991	169	-3.4%	82	1.7%	25,161	1.6%	25,412
1992	162	-3.9%	84	2.4%	24,672	-1.9%	24,918
1993	188	16.4%	94	12.5%	28,055	13.7%	28,338
1994	200	6.2%	96	1.7%	28,812	2.7%	29,108
1995	189	-5.9%	98	2.1%	27,768	-3.6%	28,055
1996	214	13.4%	134	37.7%	31,939	15.0%	32,288
1997	201	-6.2%	107	-20.3%	32,693	2.4%	33,001
1998	212	5.5%	102	-4.8%	34,510	5.6%	34,824
1999	220	4.2%	92	-9.5%	37,124	7.6%	37,437
2000	208	-5.9%	92	0.0%	40,228	8.4%	40,528
2001	213	2.7%	88	-4.1%	38,104	-5.3%	38,407
2002	215	1.1%	91	3.4%	40,104	5.2%	40,412

Source: Energy Information Administration, *Electric Power Annual, Volume II*; *Electricity Database File*.

Figure 2.16

Location of Coal-Burning Power Plants in South Carolina

Map Location	Plant	Owner	County	Initial Year of Operation
1	Canady's Steam	South Carolina Electric & Gas	Colleton	1962
2	Cope Station	South Carolina Electric & Gas	Orangeburg	1997
3	Cross	Santee Cooper	Berkeley	1984
4	Dolphus M. Grainger	Santee Cooper	Horry	1966
5	H.B. Robinson	Progress Energy	Darlington	1960
6	Hagood	South Carolina Electric & Gas	Charleston	1947
7	Jefferies	Santee Cooper	Berkeley	1953
8	McMeekin	South Carolina Electric & Gas	Lexington	1958
9	Urquhart	South Carolina Electric & Gas	Aiken	1953
10	W.S. Lee	Duke Energy	Anderson	1951
11	Wateree	Duke Energy	Kershaw	1970
12	Williams	South Carolina Electric & Gas	Berkeley	1973
13	Winyah	Santee Cooper	Georgetown	1974

Sources: Energy Information Administration, Generator level database file; South Carolina Energy Office.

Inventory of South Carolina Power Plants

There were 23 power generating utility companies with 77 power plants with a total rating capacity of 22,252.9 megawatts in 2003. These power plants contain 274 generators with the following breakdown:

- 116 HY - Hydraulic Turbine (conventional)
- 70 GT - Combustion (gas) Turbine
- 47 ST - Steam Turbine - Boiler
- 16 PS - Hydraulic Turbine - Reversible (pumped storage)
- 16 IC - Internal Combustion (diesel)
- 5 CT – Combined Cycle Combustion Turbine
- 4 CA – Combined Cycle Steam

The primary energy source for the 274 generators is as follows:

133 - Water
53 - Natural Gas (NG)
39 - Diesel Fuel Oil (DFO)
30 - Bituminous Coal (BIT)
7 - Nuclear (NUC)
5 - Black Liquor (BLQ)
2 - Residual Fuel Oil (RFO)
2 - Landfill Gas (LFG)
2 - Wood Waste Solids (WDS)
1 - Municipal Solid Waste (MSW)

Table 2.16

Inventory of Power Plants in South Carolina, 2003

Company	Plant	County	Unit No.	Rating Capacity (megawatts)	Unit Type	Primary Fuel
Abbeville, City of						
	Rocky River	Abbeville	IC1	1.10	IC	DFO
			1	1.80	HY	Water
			2	0.80	HY	Water
Aquaenergy Systems, Inc.						
	Piedmont Hydro	Greenville	GEN1	1.00	HY	Water
	Ware Shoals Hydro	Laurens	GEN1	3.00	HY	Water
			GEN2	3.20	HY	Water
Bob Jones University Cogen Plant	Bob Jones University	Greenville	ENG1	1.10	IC	DFO
			ENG2	1.10	IC	NG
			ENG3	1.10	IC	NG
			ENG4	1.10	IC	NG

Company	Plant	County	Unit No.	Rating Capacity (megawatts)	Unit Type	Primary Fuel
Broad River Energy, LLC	Broad River Energy Center	Cherokee	CT01	197.00	GT	NG
			CT02	197.00	GT	NG
			CT03	197.00	GT	NG
			CT04	197.00	GT	NG
			CT05	197.00	GT	NG
Carolina Power & Light						
	Darlington County	Darlington	1	66.80	GT	NG
			2	65.80	GT	DFO
			3	66.80	GT	NG
			4	65.80	GT	DFO
			5	66.80	GT	NG
			6	65.80	GT	DFO
			7	66.80	GT	NG
			8	65.80	GT	DFO
			9	66.80	GT	DFO
			10	65.80	GT	DFO
			11	66.80	GT	DFO
			12	158.00	GT	NG
			13	158.00	GT	NG
	H. B. Robinson	Darlington	GT1	16.30	GT	NG
			1	206.60	ST	BIT
			2	768.60	ST	NUC
Cherokee Falls Associates						
	Cherokee Falls	Cherokee	T-1	4.30	HY	Water
Converse Energy, Inc.						
	Clifton Dam 3	Spartanburg	1H	0.70	HY	Water
			2V	0.50	HY	Water
Duke Power Co.						
	Bad Creek	Oconee	1	266.30	PS	Water
			2	266.30	PS	Water
			3	266.30	PS	Water
			4	266.30	PS	Water
	Buzzard Roost	Greenwood	HC1	5.00	HY	Water
			HC2	5.00	HY	Water
			HC3	5.00	HY	Water
			6	22.70	GT	DFO
			7	22.70	GT	DFO
			8	22.70	GT	DFO
			9	22.70	GT	DFO
			10	17.80	GT	DFO
			11	17.80	GT	DFO
			12	17.80	GT	DFO

Company	Plant	County	Unit No.	Rating Capacity (megawatts)	Unit Type	Primary Fuel
			13	17.80	GT	DFO
			14	17.80	GT	DFO
			15	17.80	GT	DFO
	Catawba	York	*1	1,205.10	ST	NUC
			*2	1,205.10	ST	NUC
	Cedar Creek	Lancaster	1	15.00	HY	Water
			2	15.00	HY	Water
			3	15.00	HY	Water
	Dearborn	Chester	1	15.00	HY	Water
			2	15.00	HY	Water
			3	15.00	HY	Water
	Fishing Creek	Chester	1	9.30	HY	Water
			2	6.00	HY	Water
			3	6.00	HY	Water
			4	9.40	HY	Water
			5	6.00	HY	Water
	Gaston Shoals	Cherokee	3	1.40	HY	Water
			4	1.40	HY	Water
			5	1.40	HY	Water
			6	2.50	HY	Water
	Great Falls	Chester	1	3.00	HY	Water
			2	3.00	HY	Water
			3	3.00	HY	Water
			4	3.00	HY	Water
			5	3.00	HY	Water
			6	3.00	HY	Water
			7	3.00	HY	Water
			8	3.00	HY	Water
	Jocassee	Pickens	1	153.00	PS	Water
			2	153.00	PS	Water
			3	153.00	PS	Water
			4	153.00	PS	Water
	Keowee	Pickens	1	78.80	HY	Water
			2	78.80	HY	Water
	Mill Creek	Cherokee	1	99.90	GT	NG
			2	99.90	GT	NG
			3	99.90	GT	NG
			4	99.90	GT	NG
			5	99.90	GT	NG
			6	99.90	GT	NG
			7	99.90	GT	NG
			8	99.90	GT	NG
	Oconee	Oconee	1	886.70	ST	NUC
			2	886.70	ST	NUC
			3	893.30	ST	NUC

Company	Plant	County	Unit No.	Rating Capacity (megawatts)	Unit Type	Primary Fuel
	Rocky Creek	Fairfield	1	3.00	HY	Water
			2	3.00	HY	Water
			3	3.00	HY	Water
			4	3.00	HY	Water
			5	5.00	HY	Water
			6	5.00	HY	Water
			7	3.00	HY	Water
			8	3.00	HY	Water
	W. S. Lee	Anderson	1	90.00	ST	BIT
			2	90.00	ST	BIT
			3	175.00	ST	BIT
			4	35.10	GT	DFO
			5	35.10	GT	DFO
			6	35.10	GT	DFO
	Wateree	Kershaw	1	11.20	HY	Water
			2	11.20	HY	Water
			3	11.20	HY	Water
			4	11.20	HY	Water
			5	11.20	HY	Water
	Wylie	York	1	15.00	HY	Water
			2	15.00	HY	Water
			3	15.00	HY	Water
			4	15.00	HY	Water
	99 Islands	Cherokee	1	3.00	HY	Water
			2	3.00	HY	Water
			3	3.00	HY	Water
			4	3.00	HY	Water
			5	3.00	HY	Water
			6	3.00	HY	Water
E I DuPont De Nemours & Co.						
	Camden	Kershaw	GEN1	5.50	ST	BIT
			GEN2	5.50	ST	BIT
			GEN3	19.00	ST	BIT
FPL Energy Operat. Serv. Inc.						
	Cherokee Cogen	Cherokee	GT1	60.00	CT	NG
			ST1	41.20	CA	NG
International Paper Co-GT Mill						
	Georgetown Mill	Georgetown	GEN1	25.60	ST	BLQ
			GEN2	29.50	ST	WDS
			GEN3	40.50	ST	WDS

Company	Plant	County	Unit No.	Rating Capacity (megawatts)	Unit Type	Primary Fuel
International Paper Co-Eastover	Eastover Facility	Richland	GEN1	48.40	ST	BLQ
			GEN2	61.20	ST	BLQ
Lockhart Power Co.						
	Lockhart	Union	HY1	4.20	HY	Water
			HY3	4.20	HY	Water
			HY4	4.20	HY	Water
			HY5	1.20	HY	Water
			2	4.20	HY	Water
Montenay Charleston RRI						
	Resource Recovery	Charleston	101	13.00	ST	MSW
Northbrook Carolina Hydro						
	Boyd's Mill Hydro	Greenville	1	0.70	HY	Water
			2	0.70	HY	Water
	Hollidays Bridge	Anderson	1	1.00	HY	Water
			2	1.00	HY	Water
			3	1.00	HY	Water
			4	1.00	HY	Water
	Saluda	Greenville	1	0.60	HY	Water
			2	0.60	HY	Water
			3	0.60	HY	Water
			4	0.60	HY	Water
Orangeburg, City of						
	North Road Peak	Orangeburg	EAST	7.00	IC	DFO
			WEST	7.00	IC	DFO
	Rowesville Road Plant	Orangeburg	NA1	4.80	GT	NG
			NA2	4.80	GT	NG
Pelzer Hydro Co., Inc.						
	Pelzer Upper	Anderson	GEN1	2.00	HY	Water
	Pelzer Lower	Anderson	GEN1	3.30	HY	Water
SC Electric & Gas Co. (SCANA)						
	Burton	Beaufort	1	11.50	GT	NG
			2	11.50	GT	NG
			3	11.50	GT	NG
	Canady's Steam	Colleton	1	136.00	ST	BIT
			2	136.00	ST	BIT
			3	217.60	ST	BIT

Company	Plant	County	Unit No.	Rating Capacity (megawatts)	Unit Type	Primary Fuel
	Cogen South	Charleston	1	99.20	ST	BIT
	Coit Gt.	Richland	1	19.60	GT	NG
			2	19.60	GT	NG
	Columbia	Richland	1	1.60	HY	Water
			2	1.60	HY	Water
			3	1.60	HY	Water
			4	1.30	HY	Water
			5	1.30	HY	Water
			6	1.60	HY	Water
			7	1.60	HY	Water
	Cope	Orangeburg	ST1	417.30	ST	BIT
	Faber Place	Charleston	1	11.50	GT	NG
	Fairfield PS	Fairfield	1	63.90	PS	Water
			2	63.90	PS	Water
			3	63.90	PS	Water
			4	63.90	PS	Water
			5	63.90	PS	Water
			6	63.90	PS	Water
			7	63.90	PS	Water
			8	63.90	PS	Water
	Hagood	Charleston	4	122.00	GT	NG
	Hardeeville	Jasper	1	16.30	GT	DFO
	McMeekin	Lexington	1	146.80	ST	BIT
			2	146.80	ST	BIT
	Neal Shoals	Union	1	1.30	HY	Water
			2	1.30	HY	Water
			3	1.30	HY	Water
			4	1.30	HY	Water
	Parr	Fairfield	1	2.40	HY	Water
			2	2.40	HY	Water
			3	2.40	HY	Water
			4	2.40	HY	Water
			5	2.40	HY	Water
			6	2.40	HY	Water
	Parr Gt.	Fairfield	GT1	17.50	GT	NG
			GT2	17.50	GT	NG
			GT3	19.50	GT	NG
			GT4	19.50	GT	NG
	Saluda	Lexington	1	32.50	HY	Water
			2	32.50	HY	Water
			3	32.50	HY	Water
			4	32.50	HY	Water
			5	67.50	HY	Water
	Summer	Fairfield	*1	953.90	ST	NUC

Company	Plant	County	Unit No.	Rating Capacity (megawatts)	Unit Type	Primary Fuel
	Urquhart	Aiken	GT1	19.60	GT	NG
			GT2	16.30	GT	NG
			GT3	16.30	GT	NG
			GT4	69.30	GT	NG
			CT1	95.00	CT	NG
			CT2	95.00	CT	NG
			1	75.00	CA	NG
			2	75.00	CA	NG
			3	100.00	ST	BIT
	USDOE SRS	Aiken	1	70.00	ST	BIT
	Wateree	Richland	1	385.90	ST	BIT
			2	386.90	ST	BIT
SC Generating Co., Inc (SCANA).						
	Williams	Berkeley	ST1	632.70	ST	BIT
			1	26.90	GT	NG
			2	26.90	GT	NG
Santee Cooper						
	Cornell Dubilier	Pickens	1	2.90	IC	DFO
	Cross	Berkeley	1	590.90	ST	BIT
			2	556.20	ST	BIT
	D. M. Grainger	Horry	*1	81.60	ST	BIT
			*2	81.60	ST	BIT
	Hilton Head	Beaufort	*1	26.60	GT	DFO
			2	26.60	GT	DFO
			3	64.70	GT	DFO
	Honea Path	Abbeville	1	2.90	IC	DFO
	Horry Landfill Gas	Horry	HG1	1.00	IC	LFG
			HG2	1.00	IC	LFG
			HG3	1.10	IC	LFG
	Jefferies	Berkeley	H1	30.60	HY	Water
			H2	30.60	HY	Water
			H3	30.60	HY	Water
			H4	30.60	HY	Water
			H6	10.20	HY	Water
			1	50.00	ST	RFO
			2	50.00	ST	RFO
			3	172.80	ST	BIT
			4	172.80	ST	BIT
	John S. Rainey	Anderson	CT1A	165.00	CT	NG
			CT1B	165.00	CT	NG
			CT2A	165.00	GT	NG
			CT2B	165.00	GT	NG
			ST1S	190.00	CA	NG

Company	Plant	County	Unit No.	Rating Capacity (megawatts)	Unit Type	Primary Fuel
	Myrtle Beach	Horry	1	11.50	GT	DFO
			2	11.50	GT	DFO
			3	26.60	GT	DFO
			4	26.60	GT	DFO
			5	35.30	GT	DFO
	Spillway	Berkeley	1	2.00	HY	Water
	St. Stephen	Berkeley	*1	28.00	HY	Water
			*2	28.00	HY	Water
			*3	28.00	HY	Water
	Thermal Kem	York	1	2.90	IC	DFO
	Valenite	Oconee	1	2.90	IC	DFO
	Webb Forging	Union	1	2.90	IC	DFO
	Winyah	Georgetown	1	315.00	ST	BIT
			2	315.00	ST	BIT
			3	315.00	ST	BIT
			4	315.00	ST	BIT
Spartanburg Comm. PW	Spartanburg Water	Spartanburg	DI1	1.60	IC	DFO
			HG1	0.50	HY	Water
			HG2	0.50	HY	Water
Stone Container Corp.	Florence Mill	Florence	GEN1	12.50	ST	BLQ
			GEN2	16.00	ST	BLQ
			GEN3	79.10	ST	BIT
U.S. Corps of Engineers-Savannah District						
	J. Strom Thurmond	McCormick	1	40.00	HY	Water
			2	40.00	HY	Water
			3	40.00	HY	Water
			4	40.00	HY	Water
			5	40.00	HY	Water
			6	40.00	HY	Water
			7	40.00	HY	Water

*A jointly-owned plant.
Source: Energy Information Administration, *Generator level database file*.

SECTION 3: PETROLEUM

South Carolina Gasoline Consumption and Prices

Gasoline consumption in South Carolina increased by 114.3% during the period 1970 to 2004. During the same period, the price of gasoline increased by 344.1%, with the highest recorded average price being $1.51 in 2004. In 2003, 2,918,957 licensed South Carolina drivers with 3.2 million registered vehicles drove 48.1 billion miles (ranked 13th per capita) on South Carolina highways while consuming 2.4 billion gallons of gasoline (up 1.6% from 2002). South Carolina's annual gasoline fuel consumption trend is similar to the consumption trend of the United States, but as Figure 3.2 illustrates, South Carolina continues to substantially exceed the national average on a per capita basis.

Table 3.1

South Carolina Annual Gasoline Consumption and Average Retail Price including Taxes 1970-2004

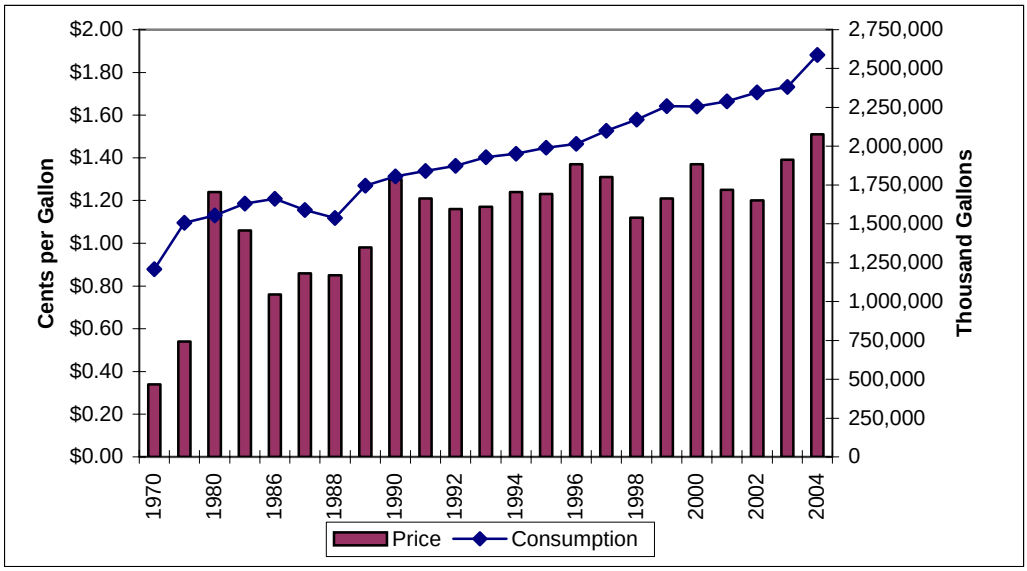
Year	Consumption (Thousand Gallons)	Percent Change	Price (Cents per Gallon)*	Percent Change
1970	1,207,752	N/A	0.34	N/A
1975	1,506,212	3.4%	0.54	1.9%
1980	1,554,812	-6.2%	1.24	37.8%
1985	1,630,017	1.8%	1.06	-13.1%
1990	1,805,128	3.4%	1.30	32.7%
1991	1,840,515	2.0%	1.21	-6.9%
1992	1,872,326	1.7%	1.16	-4.1%
1993	1,929,294	3.0%	1.17	0.9%
1994	1,950,440	1.1%	1.24	6.0%
1995	1,989,943	2.0%	1.23	-0.8%
1996	2,014,159	1.2%	1.37	11.4%
1997	2,100,203	4.3%	1.31	-4.4%
1998	2,172,260	3.4%	1.12	-14.5%
1999	2,257,696	3.9%	1.21	8.0%
2000	2,255,223	-0.1%	1.37	13.2%
2001	2,289,942	1.5%	1.25	-8.8%
2002	2,345,696	2.4%	1.20	-4.0%
2003	2.382.315	1.6%	1.39	15.8%
2004	2,587,938	8.6%	1.51	8.6%

*Price is for regular grade gasoline.

Sources: Federal Highway Administration, *Highway Statistics*; South Carolina Dept. of Revenue, Form L-307; AAA Carolinas Motor Club; and. Energy Information Administration, *Petroleum Marketing Monthly.*

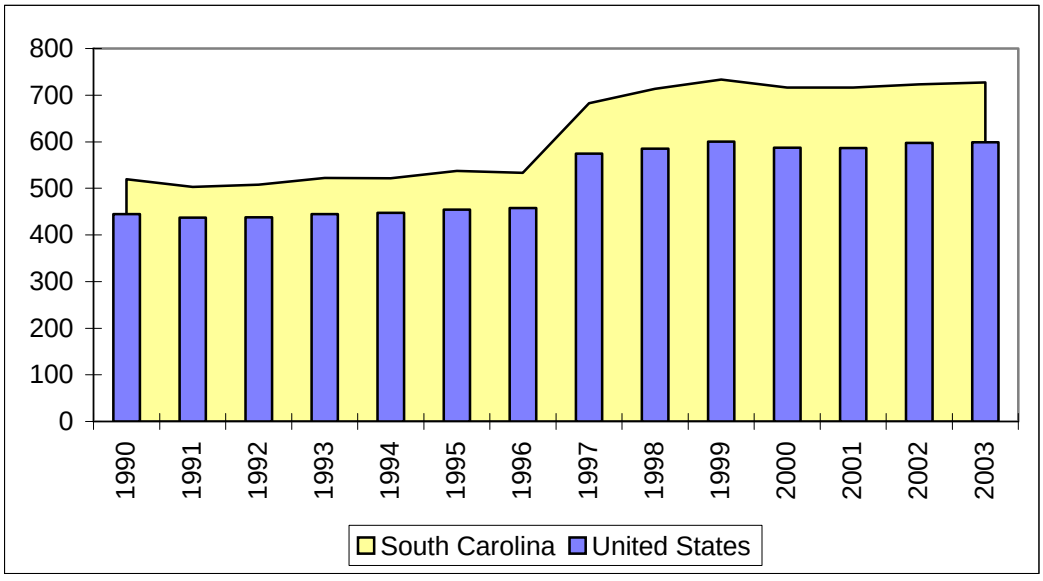
Figure 3.1

South Carolina Average Annual Retail Gasoline Prices v. Consumption, 1970-2004



Sources: Federal Highway Administration, Highway Statistics; SC Department of Revenue, Form L-307; AAA Carolinas Motor Club; Energy Information Administration, *Petroleum Marketing Monthly*.

Figure 3.2
United States and South Carolina Motor Fuel Consumption per Capita, 1990-2003



Sources: Energy Information Administration, *State Energy Data Report*; Federal Highway Administration, *Highway Statistics*.

Table 3.2

South Carolina Monthly Gasoline Consumption, 1993-2004
(Thousand Gallons)

Month	1993	1994	1995	1996	1997	1998
Jan	146,042	150,033	151,943	149,093	161,748	168,916
Feb	144,119	143,505	147,029	149,384	154,497	158,005
Mar	160,540	165,902	171,129	158,155	178,250	181,382
Apr	167,550	165,889	166,803	152,823	175,317	179,226
May	162,637	158,365	171,801	186,059	181,557	183,487
June	164,326	166,489	173,100	177,482	175,071	189,305
July	173,612	170,454	175,474	182,531	188,975	196,474
Aug	168,546	182,397	175,177	181,507	186,252	190,846
Sept	160,331	161,892	158,545	152,157	170,245	178,469
Oct	157,166	157,184	169,668	186,362	180,218	185,944
Nov	157,555	161,365	165,245	167,956	168,931	173,467
Dec	166,870	166,965	164,029	170,650	179,142	186,739
TOTAL	1,929,294	1,950,440	1,989,943	2,014,159	2,100,203	2,172,260
%Change	3.0%	1.1%	2.0%	1.2%	4.3%	3.4%

Month	1999	2000	2001	2002	2003	2004
Jan	168,526	162,645	177,297	176,429	184,289	185,044
Feb	164,524	175,558	168,989	174,839	174,968	184,130
Mar	190,297	194,601	193,572	199,281	196,203	211,315
Apr	189,616	187,566	192,169	198,890	200,855	216,956
May	188,842	200,418	197,568	208,944	200,001	214,753
June	190,191	195,851	194,400	196,491	202,169	213,582
July	207,052	197,863	202,287	212,252	212,271	239,098
Aug	204,733	198,600	206,092	209,383	212,260	213,033
Sept	188,721	180,423	183,371	186,311	196,450	233,296
Oct	186,608	191,422	197,251	198,401	205,175	248,540
Nov	182,570	182,323	188,699	189,348	191,597	230,157
Dec	196,016	187,953	188,247	195,127	206,077	198,034
TOTAL	2,257,696	2,255,223	2,289,942	2,345,696	2,382,315	2,587,938
%Change	3.9%	-0.1%	1.5%	2.4%	1.6%	8.6%

Source: South Carolina Department of Revenue, Form L-307.

U.S. and South Carolina Comparison of Average Prices for Conventional Motor Gasoline

South Carolina prices per gallon for regular motor gasoline, without taxes, increased by 103.1% ($0.688) from 1995 to 2004, as compared with a national increase of 94.2% ($0.676). Midgrade motor gasoline prices rose by 89.4% ($0.692) in South Carolina and 86.3% ($0.689) in the U.S. Premium gasoline prices in South Carolina jumped 80.2% ($0.696) per gallon and by 80.7% ($0.710) on the national scene. South Carolina has the 7th lowest gasoline tax rate in the nation at 16 cents per gallon, while the U.S. average is 19.1 cents per gallon.

Table 3.3

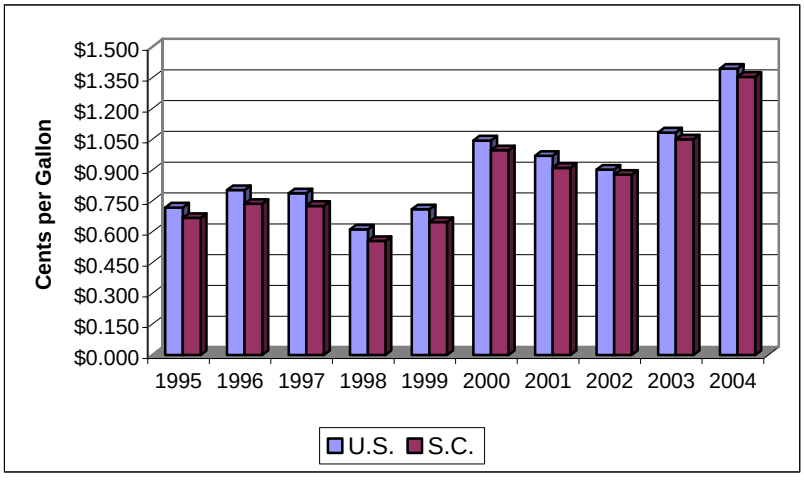
U.S. and South Carolina Conventional Motor Gasoline Average Prices by Grade Through Retail Outlets, 1995-2004
(Cents per Gallon, excluding taxes)

Year	Regular		Midgrade		Premium	
	U.S.	S.C.	U.S.	S.C.	U.S.	S.C.
1995	$0.718	$0.667	$0.798	$0.774	$0.880	$0.868
1996	$0.803	$0.736	$0.878	$0.842	$0.958	$0.933
1997	$0.787	$0.726	$0.869	$0.827	$0.948	$0.915
1998	$0.612	$0.555	$0.699	$0.657	$0.777	$0.745
1999	$0.709	$0.647	$0.790	$0.746	$0.863	$0.830
2000	$1.045	$0.998	$1.125	$1.099	$1.200	$1.183
2001	$0.969	$0.911	$1.054	$1.015	$1.127	$1.096
2002	$0.903	$0.878	$0.987	$0.982	$1.071	$1.072
2003	$1.084	$1.050	$1.171	$1.155	$1.254	$1.245
2004	$1.394	$1.355	$1.487	$1.466	$1.590	$1.564

Source: Energy Information Administration, *Petroleum Marketing Monthly; Petroleum Prices Database.*.

Figure 3.3

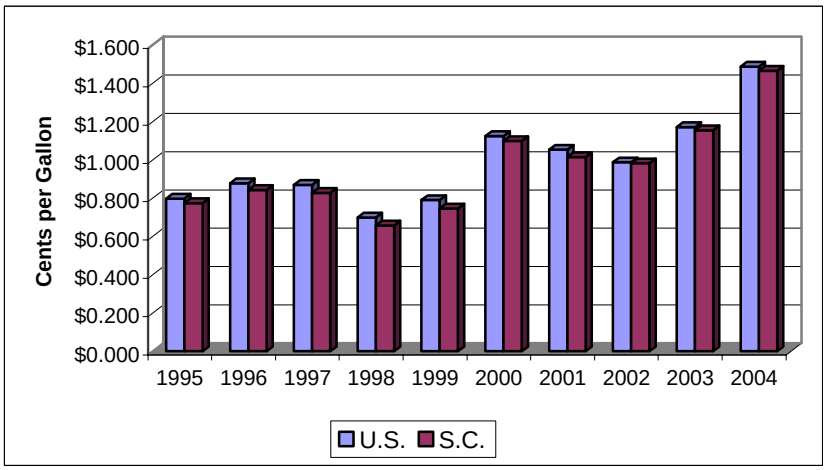
U.S. and S.C. Comparison of Price per Gallon for Regular Conventional Motor Gasoline, 1995-2004



Source: Energy Information Administration, *Petroleum Prices Database*.

Figure 3.4

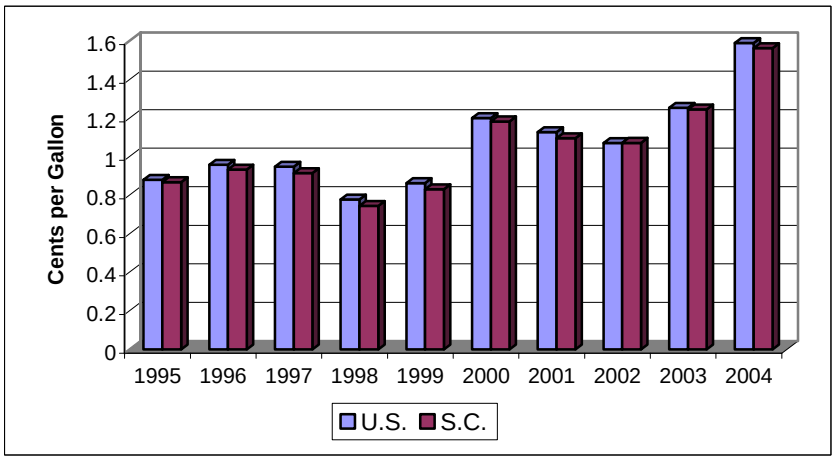
U.S. and S.C. Comparison of Price per Gallon for Mid-grade Conventional Motor Gasoline, 1995-2004



Source: Energy Information Administration, *Petroleum Marketing Monthly*.

Figure 3.5

U.S. and S.C. Comparison of Price per Gallon for Premium Conventional Motor Gasoline, 1995-2004



Source: Energy Information Administration, *Petroleum Marketing Monthly*.

Table 3.4

Monthly Prices of Conventional Motor Gasoline by Grade in South Carolina, 1995-2003 (Cents per Gallon, excluding taxes)

1995

	Regular	Mid-grade	Premium
Jan	$0.636	$0.741	$0.840
Feb	$0.628	$0.737	$0.836
Mar	$0.621	$0.726	$0.822
Apr	$0.677	$0.784	$0.881
May	$0.752	$0.859	$0.957
Jun	$0.756	$0.865	$0.952
Jul	$0.725	$0.829	$0.913
Aug	$0.679	$0.786	$0.879
Sep	$0.660	$0.769	$0.869
Oct	$0.639	$0.746	$0.847
Nov	$0.612	$0.722	$0.824
Dec	$0.608	$0.719	$0.813
AVERAGE	**$0.667**	**$0.774**	**$0.868**

1996

	Regular	Mid-grade	Premium
Jan	$0.632	$0.742	$0.837
Feb	$0.632	$0.742	$0.831
Mar	$0.686	$0.795	$0.894
Apr	$0.777	$0.884	$0.983
May	$0.798	$0.906	$0.999
Jun	$0.774	$0.882	$0.975
Jul	$0.750	$0.858	$0.949
Aug	$0.731	$0.844	$0.938
Sep	$0.721	$0.831	$0.924
Oct	$0.731	$0.840	$0.933
Nov	$0.778	$0.880	$0.971
Dec	$0.785	$0.888	$0.982
AVERAGE	**$0.736**	**$0.842**	**$0.933**

1997

	Regular	Mid-grade	Premium
Jan	$0.783	$0.889	$0.982
Feb	$0.772	$0.878	$0.969
Mar	$0.751	$0.853	$0.944
Apr	$0.736	$0.841	$0.927
May	$0.723	$0.827	$0.917
Jun	$0.707	$0.811	$0.894
Jul	$0.696	$0.799	$0.885
Aug	$0.752	$0.851	$0.933
Sep	$0.750	$0.850	$0.941
Oct	$0.716	$0.816	$0.908
Nov	$0.684	$0.785	$0.878
Dec	$0.648	$0.748	$0.842
AVERAGE	**$0.726**	**$0.826**	**$0.915**

1998

	Regular	Mid-grade	Premium
Jan	$0.611	$0.715	$0.804
Feb	$0.581	$0.679	$0.769
Mar	$0.566	$0.667	$0.752
Apr	$0.576	$0.679	$0.772
May	$0.586	$0.687	$0.778
Jun	$0.572	$0.676	$0.766
Jul	$0.556	$0.658	$0.751
Aug	$0.538	$0.642	$0.730
Sep	$0.527	$0.632	$0.719
Oct	$0.546	$0.646	$0.735
Nov	$0.523	$0.622	$0.711
Dec	$0.478	$0.584	$0.669
AVERAGE	**$0.555**	**$0.657**	**$0.745**

1999

	Regular	Mid-grade	Premium
Jan	$0.453	$0.559	$0.645
Feb	$0.442	$0.548	$0.635
Mar	$0.507	$0.613	$0.703
Apr	$0.617	$0.723	$0.818
May	$0.626	$0.730	$0.828
Jun	$0.619	$0.721	$0.816
Jul	$0.664	$0.767	$0.862
Aug	$0.727	$0.832	$0.929
Sep	$0.762	$0.866	$0.965
Oct	$0.760	$0.866	$0.961
Nov	$0.773	$0.882	$0.974
Dec	$0.801	$0.909	$0.997
AVERAGE	**$0.647**	**$0.746**	**$0.830**

2000

	Regular	Mid-grade	Premium
Jan	$0.814	$0.920	$1.008
Feb	$0.907	$1.013	$1.101
Mar	$1.049	$1.154	$1.236
Apr	$0.978	$1.085	$1.164
May	$0.998	$1.107	$1.183
Jun	$1.074	$1.178	$1.266
Jul	$1.081	$1.182	$1.270
Aug	$1.009	$1.113	$1.201
Sep	$1.041	$1.148	$1.236
Oct	$1.024	$1.132	$1.216
Nov	$1.003	$1.103	$1.192
Dec	$0.935	$1.038	$1.120
AVERAGE	**$0.998**	**$1.099**	**$1.183**

2001

	Regular	Mid-grade	Premium
Jan	$0.971	$1.075	$1.160
Feb	$0.987	$1.090	$1.177
Mar	$0.914	$1.018	$1.108
Apr	$1.066	$1.169	$1.255
May	$1.132	$1.233	$1.321
Jun	$1.037	$1.145	$1.222
Jul	$0.879	$0.982	$1.069
Aug	$0.882	$0.985	$1.078
Sep	$0.955	$1.055	$1.147
Oct	$0.814	$0.920	$1.008
Nov	$0.675	$0.780	$0.871
Dec	$0.623	$0.724	$0.816
AVERAGE	**$0.911**	**$1.015**	**$1.095**

2002

	Regular	Mid-grade	Premium
Jan	$0.659	$0.763	$0.854
Feb	$0.652	$0.758	$0.842
Mar	$0.801	$0.897	$0.997
Apr	$0.925	$1.028	$1.123
May	$0.907	$1.012	$1.106
Jun	$0.882	$0.989	$1.083
Jul	$0.892	$0.997	$1.092
Aug	$0.894	$1.000	$1.096
Sep	$0.911	$1.017	$1.114
Oct	$0.990	$1.096	$1.194
Nov	$0.975	$1.079	$1.171
Dec	$0.950	$1.057	$1.152
AVERAGE	**$0.878**	**$0.982**	**$1.072**

2003

	Regular	Mid-grade	Premium
Jan	$1.006	$1.108	$1.204
Feb	$1.155	$1.258	$1.350
Mar	$1.184	$1.287	$1.380
Apr	$1.075	$1.182	$1.271
May	$0.961	$1.067	$1.160
Jun	$0.972	$1.080	$1.171
Jul	$1.012	$1.117	$1.212
Aug	$1.099	$1.206	$1.300
Sep	$1.109	$1.212	$1.304
Oct	$1.031	$1.141	$1.234
Nov	$0.997	$1.111	$1.204
Dec	$0.999	$1.113	$1.208
AVERAGE	**$1.050**	**$1.155**	**$1.245**

2004

	Regular	Midgrade	Premium
JAN	$1.108	$1.218	$1.315
FEB	$1.161	$1.274	$1.372
MAR	$1.234	$1.342	$1.437
APR	$1.299	$1.411	$1.503
MAY	$1.460	$1.573	$1.675
JUN	$1.474	$1.586	$1.687
JUL	$1.422	$1.542	$1.641
AUG	$1.388	$1.499	$1.596
SEP	$1.373	$1.489	$1.585
OCT	$1.497	$1.599	$1.699
NOV	$1.483	$1.590	$1.690
DEC	$1.357	$1.466	$1.562
AVERAGE	**$1.355**	**$1.466**	**$1.564**

Source: Energy Information Administration, *Petroleum Marketing Monthly*.

Motor Fuel Consumption per Registered Vehicle

Table 3.5 and Figure 3.6 both illustrate that drivers in South Carolina continue to consume more fuel per registered vehicle than the national average. In 2003, South Carolinians consumed 201 gallons more per registered vehicle than the average vehicle in the United States. Figure 3.4 shows that the average annual miles driven per automobile in South Carolina increased by 13.1% (13,460 to 15,218) from 1993 to 2003.

Table 3.5

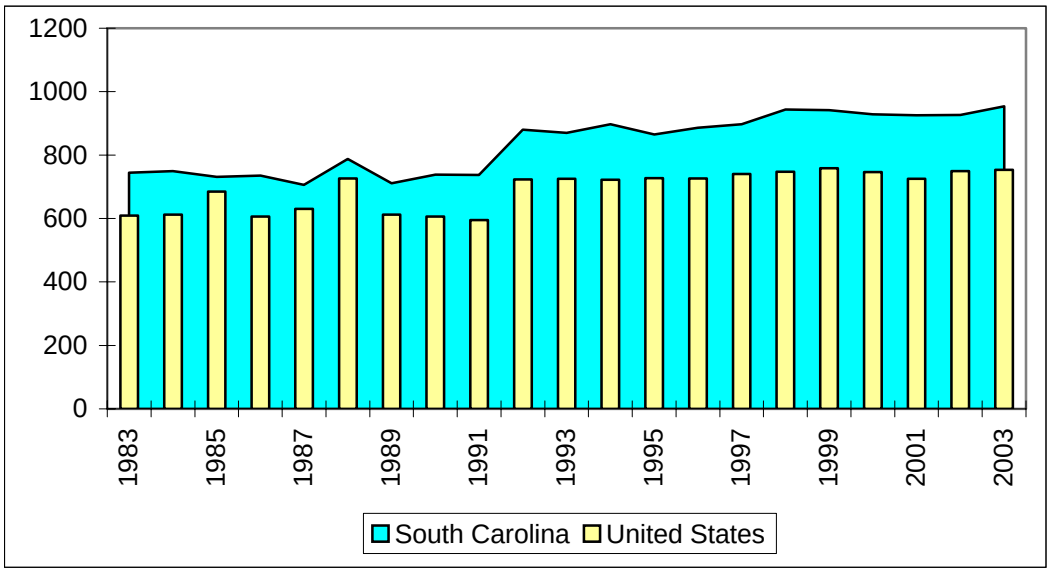
South Carolina and United States Motor Fuel Consumption per Registered Vehicle, 1980-2003

Year	South Carolina		United States	
	Consumption per Registered Vehicle (Gallons)	Percent Change	Consumption per Registered Vehicle (Gallons)	Percent Change
1980	774	-6.0%	649	-7.3%
1983	744	-2.7%	609	2.9%
1984	749	0.7%	612	0.5%
1985	731	-2.4%	685	11.9%
1986	735	0.5%	606	-11.5%
1987	706	-3.9%	630	4.0%
1988	788	11.6%	726	15.2%
1989	711	-9.8%	612	-15.7%
1990	738	3.8%	606	-1.0%
1991	737	-0.1%	595	-1.8%
1992	720	-2.3%	608	2.2%
1993	718	-0.3%	600	-1.3%
1994	711	-1.0%	600	0.0%
1995	864	21.5%	726	21.0%
1996	886	2.5%	726	0.0%
1997	897	1.2%	740	1.9%
1998	944	5.2%	747	0.9%
1999	942	-0.2%	758	1.5%
2000	929	-1.4%	746	-1.6%
2001	926	-0.3%	725	-2.8%
2002	927	0.1%	749	3.3%
2003	954	2.9%	753	0.5%

Sources: Federal Highway Administration, *Highway Statistics*, and South Carolina Department of Revenue.

Figure 3.6

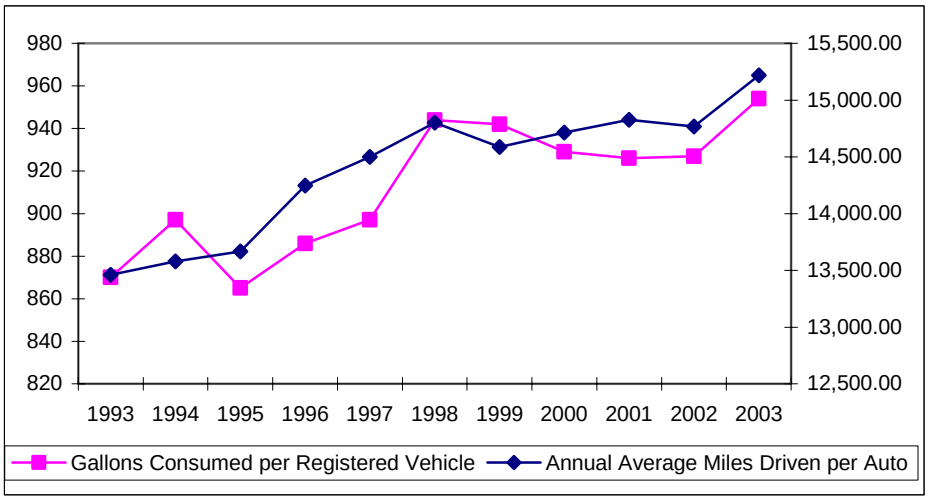
United States and South Carolina Motor Fuel Consumption per Registered Vehicle, 1983-2003



Sources: Federal Highway Administration, *Highway Statistics*, and South Carolina Department of Revenue.

Figure 3.7

Average Annual Miles Driven and Motor Fuel Consumption per Vehicle in South Carolina, 1993-2003



Sources: Federal Highway Administration, *Highway Statistics*, and South Carolina Department of Revenue.

South Carolina Aviation Fuel Consumption

Table 3.6

South Carolina Monthly Aviation Fuel Consumption, 1993-2004
(Gallons)

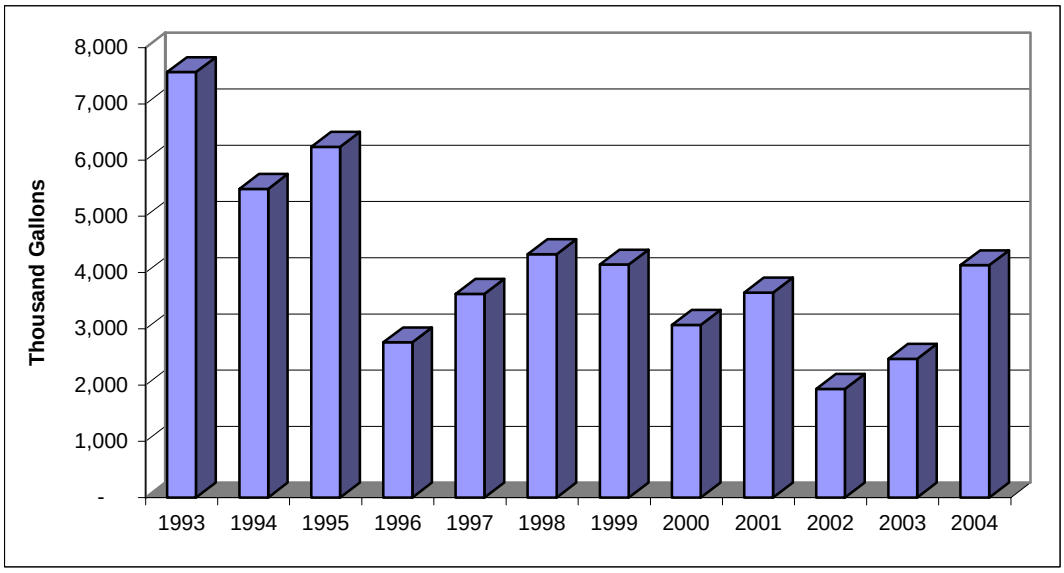
Month	1993	1994	1995	1996	1997	1998
Jan	574,653	442,913	436,230	301,861	155,815	356,385
Feb	451,314	576,866	385,222	223,887	235,287	314,122
Mar	611,161	662,901	634,164	249,004	254,266	362,627
Apr	861,048	651,782	412,543	203,530	315,255	387,001
May	671,661	626,811	618,866	250,117	380,620	329,186
June	897,799	527,966	638,966	197,763	323,687	350,677
July	551,340	620,199	551,634	261,659	302,410	472,294
Aug	883,561	-613,261	555,637	232,998	379,149	378,605
Sept	724,844	531,436	550,638	196,208	347,625	350,600
Oct	336,107	424,580	556,127	243,540	370,920	384,413
Nov	560,442	587,126	492,366	226,290	279,629	294,280
Dec	441,420	448,873	403,651	174,052	277,378	347,403
TOTAL	7,565,350	5,488,192	6,236,044	2,760,909	3,622,041	4,327,593
% Change	-20.9%	-27.5%	13.6%	-55.7%	31.2%	19.5%

Month	1999	2000	2001	2002	2003	2004
Jan	250,269	206,928	287,803	227,352	112,684	412,143
Feb	290,053	238,032	309,759	157,736	86,491	167,896
Mar	406,648	294,796	291,642	174,283	155,217	311,535
Apr	496,189	286,941	431,852	249,613	292,422	308,038
May	299,902	296,970	327,427	205,172	142,899	157,929
June	362,697	247,746	292,372	102,379	168,668	469,935
July	398,280	213,705	289,507	127,218	264,517	313,339
Aug	328,541	282,143	311,322	130,676	256,368	432,306
Sept	396,896	194,000	167,179	82,462	209,642	323,814
Oct	311,308	360,335	327,378	148,000	340,178	438,808
Nov	320,222	284,078	356,522	161,548	198,833	438,009
Dec	281,772	164,043	250,229	168,091	237,677	356,496
TOTAL	4,142,777	3,069,717	3,642,992	1,934,530	2,465,596	4,130,248
% Change	-4.3%	-25.9%	18.7%	-46.9%	27.5%	67.5%

Source: South Carolina Department of Revenue.

Figure 3.8

South Carolina Annual Aviation Fuel Consumption, 1993-2004
(Thousand Gallons)



Source: South Carolina Department of Revenue.

South Carolina Highway Diesel Fuel Consumption

During the two-decade period 1984 to 2004, diesel fuel consumption in South Carolina increased by 143.3%. There was a 10% increase in consumption from 2003 to 2004. With regards to total motor fuel sales in South Carolina, diesel fuel sales percentage has remained relatively constant, generally accounting for about 20% of total fuel sales. Historically, the largest increases in diesel fuel consumption occurred in 1986, 1989 and 1994. South Carolina has the 9th lowest state tax rate on diesel fuel in the nation at 16 cents per gallon. The U.S. average is 19.39 cents per gallon.

Table 3.7

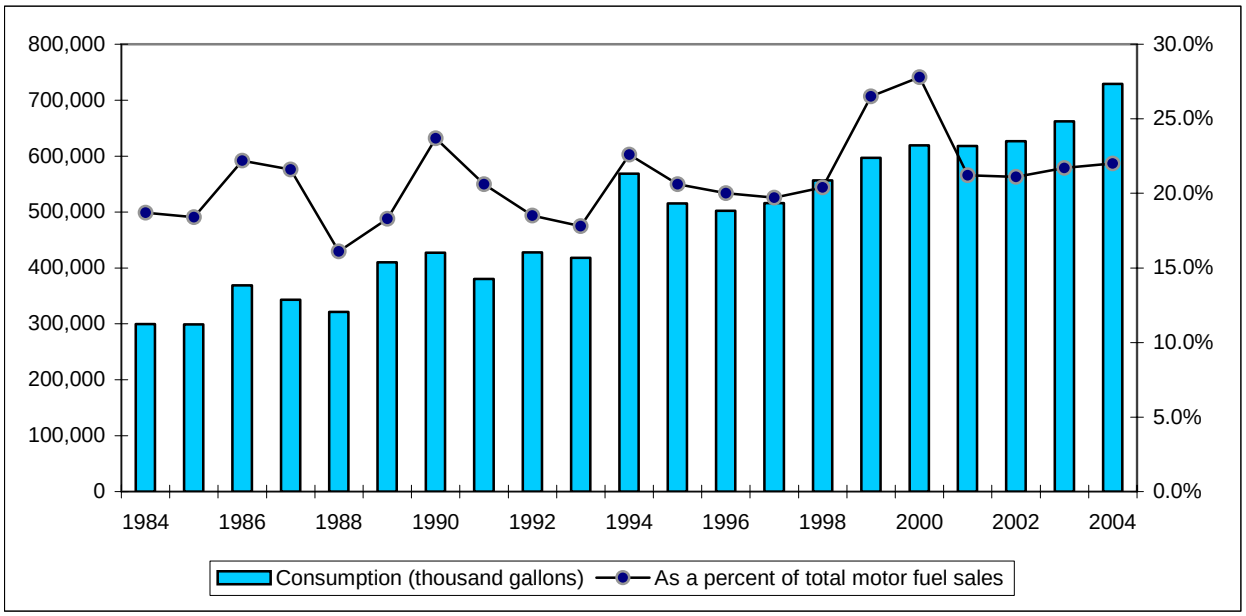
South Carolina Annual Highway Diesel Fuel Consumption 1984-2004

Year	Consumption (Thousand Gallons)	Percent Change	Diesel as a Percent of Total Motor Fuel Sales
1984	299,577	12.2%	18.7%
1985	299,050	-0.2%	18.4%
1986	368,570	23.2%	22.2%
1987	343,271	-6.9%	21.6%
1988	321,262	-6.4%	16.1%
1989	410,117	27.7%	18.3%
1990	427,201	4.2%	23.7%
1991	380,015	-11.0%	20.6%
1992	427,848	12.6%	18.5%
1993	418,208	-2.3%	17.8%
1994	568,629	36.0%	22.6%
1995	515,358	-9.4%	20.6%
1996	502,227	-2.5%	20.0%
1997	515,620	2.7%	19.7%
1998	556,525	7.9%	20.4%
1999	596,991	7.3%	26.5%
2000	619,555	3.8%	27.8%
2001	618,278	-0.2%	21.2%
2002	626,576	1.3%	21.1%
2003	662,326	5.6%	21.7%
2004	728,868	10.0%	22.0%

Source: South Carolina Department of Revenue.

Figure 3.9

South Carolina Diesel Fuel Consumption and as a Percent of Total Motor Fuel Consumption, 1984-2004



Source: South Carolina Department of Revenue.

Table 3.8

South Carolina Monthly Diesel Fuel Consumption, 1993-2004

Month	1993	1994	1995	1996	1997	1998
Jan	33,299	35,736	40,715	46,424	41,405	46,657
Feb	30,624	31,909	34,553	35,757	39,128	41,285
Mar	9,625	80,940	46,256	40,817	42,360	47,921
Apr	41,577	46,960	50,959	44,453	44,007	46,887
May	34,055	54,340	40,184	41,858	43,281	45,340
June	46,630	49,441	49,768	37,975	41,280	48,322
July	32,004	36,377	40,330	42,914	42,621	47,395
Aug	35,820	39,926	40,434	45,488	42,833	46,587
Sept	44,260	45,923	44,005	40,797	43,262	47,028
Oct	34,248	63,625	47,926	45,477	47,973	49,480
Nov	32,464	37,552	38,128	41,265	43,261	43,976
Dec	43,602	45,900	42,100	39,002	44,209	45,647
TOTAL	418,208	568,629	515,358	502,227	515,620	556,525
%Change	-2.3%	36.0%	-9.4%	-2.5%	2.7%	7.9%

Month	1999	2000	2001	2002	2003	2004
Jan	44,670	45,622	54,198	49,836	54,041	52,086
Feb	43,580	51,160	48,698	49,074	50,149	52,695
Mar	52,520	58,167	53,845	53,681	55,473	63,083
Apr	49,334	51,426	51,245	54,627	58,347	62,249
May	48,247	56,072	54,857	56,113	59,681	59,978
June	50,659	54,585	52,022	51,051	55,738	61,434
July	47,470	48,267	50,105	53,521	55,388	60,683
Aug	51,246	54,490	54,719	54,107	54,567	59,803
Sept	48,357	48,979	47,831	50,398	55,274	64,355
Oct	60,853	50,048	55,282	56,200	58,341	69,046
Nov	49,304	51,447	50,305	49,736	51,415	63,734
Dec	50,751	49,292	45,171	48,232	53,912	59,722
TOTAL	596,991	619,555	618,278	626,576	662,326	728,868
%Change	7.3%	3.8%	-0.2%	1.3%	5.7%	10.0%

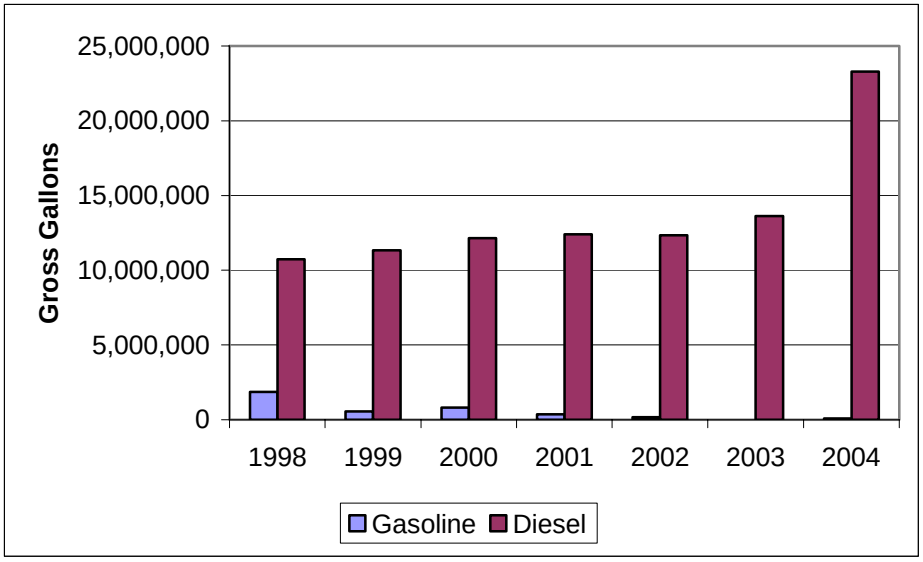
Source: South Carolina Department of Revenue.

South Carolina School Bus Transportation Fuel Consumption

The South Carolina school bus transportation system has greatly decreased its use of gasoline as a fuel source for its fleet, and greatly increased its use of diesel as the predominant fuel source. From 1998 to 2004, gasoline consumption in school buses fell by nearly 95%, and diesel fuel use increased by 116.9%.

Figure 3.10

South Carolina School Bus Motor Fuel Consumption, 1998-2004



Source: South Carolina Department of Revenue, Form L307.

Table 3.9

South Carolina School Bus Monthly Motor Fuel Consumption
(Gross gallons reported)

Month	1999		2000		2001	
	Gasoline	Diesel	Gasoline	Diesel	Gasoline	Diesel
Jan	616	1,049,762	46,792	966,909	61,210	1,238,977
Feb	64,355	500	113,908	1,336,925	52,734	1,305,039
Mar	144,078	1,357,533	179,573	1,348,112	43,327	1,409,418
Apr	0	0	57,376	999,419	1,346	0
May	112,657	2,211,195	56,798	1,259,317	38,207	2,234,348
June	11,867	268,576	56,249	308,151	33,258	288,479
July	0	0	31,354	217,138	479	148,891
Aug	5,490	767,147	965	850,818	23,581	1,029,576
Sept	89,372	1,099,024	46,451	1,218,638	26,402	1,148,243
Oct	1,433	0	118,334	1,343,097	521	0
Nov	62,480	2,482,282	3,516	1,198,745	62,379	1,442,257
Dec	63,975	2,105,629	109,631	1,095,004	22,770	2,158,310
TOTAL	556,323	11,341,648	820,947	12,142,273	366,214	12,403,538

Month	2002		2003		2004	
	Gasoline	Diesel	Gasoline	Diesel	Gasoline	Diesel
Jan	49,269	1,123,281	452	990,910	0	0
Feb	27,188	1,260,351	449	2,462,696	2,910	1,022,350
Mar	28,164	1,339,176	391	1,361,743	0	1,073,649
Apr	23,190	1,116,758	3,707	1,361,820	985	0
May	0	1,172,957	3,010	2,340,936	1,106	873
June	145	245,622	0	1,331,214	1,676	1,184,128
July	0	0	0	806	0	1,103,828
Aug	0	106	0	0	1,653	2,967,031
Sept	873	126,742	0	135,067	1,697	4,295,371
Oct	16,419	952,314	0	788,434	816	942,974
Nov	9,644	3,859,163	0	1,349,269	70,936	6,071,625
Dec	17,310	1,148,854	0	1,498,764	1,671	4,628,063
TOTAL	172,202	12,345,324	8,009	13,621,659	83,450	23,289,892

Source: South Carolina Department of Revenue.

South Carolina Petroleum Consumption by Type of Product

South Carolina experienced a 35.5% increase in petroleum consumption during the period 1981 to 2001. The two petroleum products that were consumed the most during this period were motor gasoline (51.2% increase) and distillate fuel oil (97.4% increase). Quite noticeable during this period was the significant decrease (59.3%) in the consumption of residual fuel, which is used for electric power production and various industrial purposes. In 2001, motor gasoline was the petroleum product consumed in the largest amount with 61.8%; distillate fuel accounted for 22.2%, and liquefied petroleum gases (LPG), residual fuel, jet fuel, kerosene and "other" accounted for the other petroleum product consumption on a much lesser scale.

Table 3.10

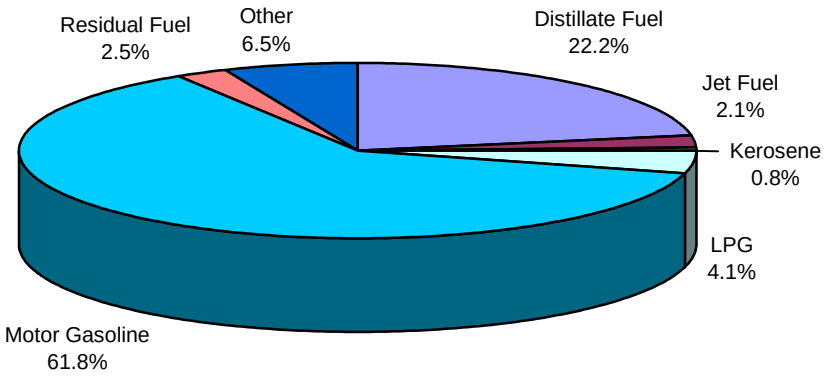
South Carolina Petroleum Consumption by Type of Product, 1981-2001
(Thousand Barrels)

Year	Distillate Fuel[1]	Jet Fuel	Kerosene	LPG[2]	Motor Gasoline	Residual Fuel[3]	Other*	Total	Percent Change
1981	9,822	2,865	679	2,826	35,600	5,349	7,158	64,299	-4.2%
1982	9,485	2,745	605	2,606	35,446	3,133	5,674	59,694	-7.2%
1983	10,553	2,529	635	2,621	35,896	3,933	5,491	61,658	3.3%
1984	11,510	3,080	427	2,520	37,133	5,013	5,433	65,116	5.6%
1985	11,731	3,184	1,484	3,161	37,719	2,921	5,550	65,750	1.0%
1986	11,696	3,168	1,181	2,880	39,283	2,401	6,762	67,371	2.5%
1987	11,850	3,193	1,359	3,620	38,522	2,458	7,712	68,714	2.0%
1988	12,606	3,229	1,484	3,536	42,828	3,274	8,671	75,628	10.1%
1989	12,499	3,117	1,426	3,672	42,171	2,743	7,567	73,195	-3.2%
1990	14,866	2,939	659	2,914	43,264	2,416	8,084	74,848	2.3%
1991	16,237	3,442	851	3,606	42,561	2,419	9,647	77,829	4.0%
1992	14,033	2,586	524	3,597	43,441	2,368	10,708	76,987	-1.1%
1993	13,548	2,024	760	3,660	45,081	3,763	10,306	79,295	3.0%
1994	15,297	1,451	474	3,871	45,249	2,568	10,198	79,366	0.1%
1995	14,501	1,027	574	3,826	46,973	2,649	10,650	80,641	1.6%
1996	15,174	1,292	673	3,666	47,427	2,984	5,670	77,361	-4.1%
1997	15,815	1,328	694	6,150	49,468	2,590	6,877	83,514	8.0%
1998	18,227	1,436	837	4,601	51,216	2,212	6,589	85,935	2.9%
1999	18,271	1,536	667	3,858	52,774	1,757	6,768	86,705	0.9%
2000	18,879	1,861	682	5,038	53,040	2,324	6,818	89,469	3.2%
2001	19,389	1,851	662	3,563	53,822	2,178	5,685	87,150	-1.7%

*Other includes asphalt and road oil, aviation gasoline, lubricants, and other.
[1]Distillate fuel includes fuel oils No. 1, No. 2, and No. 4, and diesel fuels No.1, No. 2 and No. 4; these products are used primarily for space heating, on-and-off highway diesel engine fuel, and electric power generation.
[2]Liquefied petroleum gas (propane).
[3]Residual fuel includes products known as No. 5 and No. 6 fuel oil and heavy diesel oil; mostly used for industrial purposes.
Source: Energy Information Administration, *State Energy Data Report*.

Figure 3.11

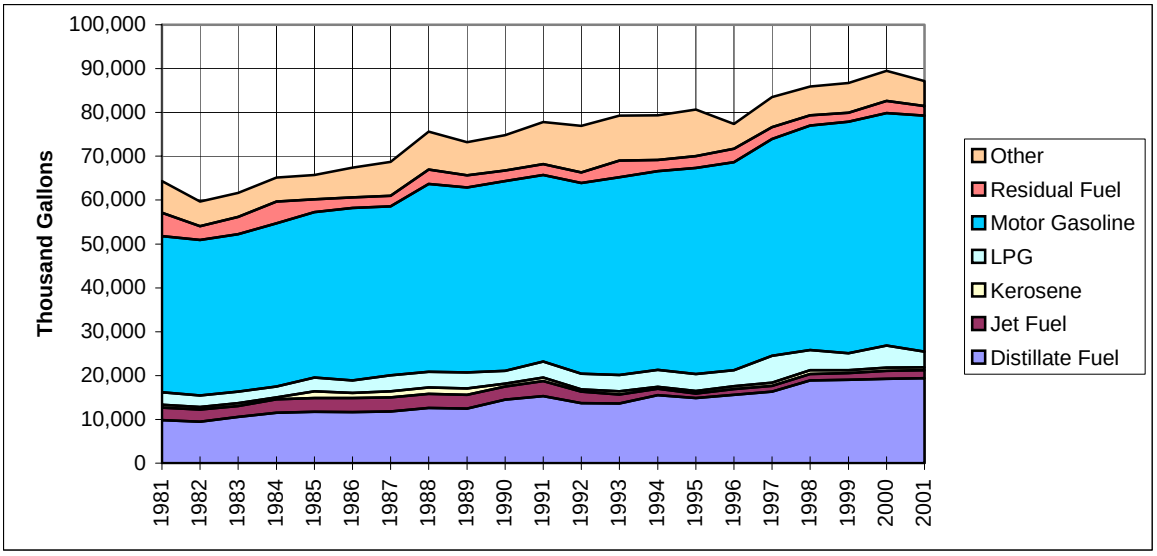
South Carolina Petroleum Consumption by Type of Product, 2001



Source: Energy Information Administration, *State Petroleum Database*.

Figure 3.12

South Carolina Petroleum Consumption by Type of Product, 1981-2001



Source: Energy Information Administration, *State Petroleum Database*.

South Carolina Petroleum Consumption by Economic Sector

As indicated in Table 3.7, petroleum consumption increased by 35.5% in South Carolina from 1981 to 2001 Most of the increase occurred in the transportation sector, where petroleum use increased by 56.2%. Petroleum use in the transportation sector has since increased nearly every year since 1980. In 2001, the transportation sector accounted for 81.2% of all petroleum use in South Carolina, followed by the industrial sector, which accounted for 14% of the total petroleum use.

Table 3.11

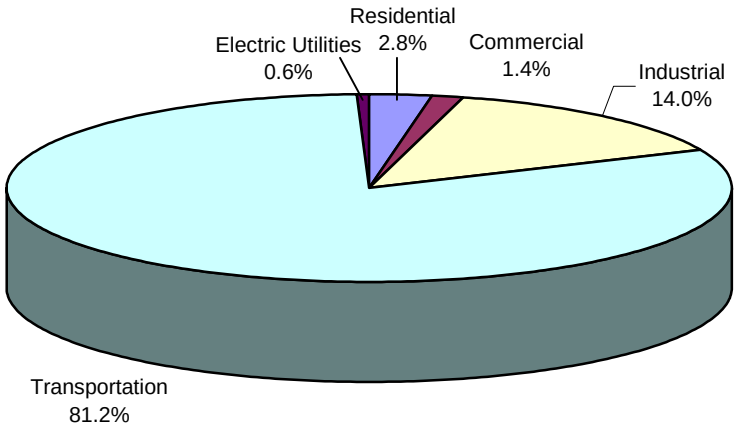
South Carolina Petroleum Consumption by Economic Sector, 1981-2001
(Thousand Barrels)

Year	Residential	Commercial	Industrial	Transportation	Electric Utilities	TOTAL
1981	3,542	1,094	12,241	45,318	2,104	64,299
1982	2,963	939	9,946	45,369	477	59,694
1983	3,231	1,509	10,342	46,437	140	61,658
1984	3,146	1,456	11,417	48,955	143	65,116
1985	4,223	1,527	10,870	48,936	184	65,750
1986	3,845	1,326	11,264	50,819	118	67,371
1987	4,523	1,551	12,613	49,913	116	68,714
1988	4,371	1,710	14,366	54,985	195	75,628
1989	4,556	1,608	13,123	53,622	285	73,195
1990	3,241	1,189	13,230	57,063	125	74,848
1991	3,698	1,026	14,910	58,052	144	77,829
1992	3,248	1,214	15,616	56,751	159	76,987
1993	3,619	1,306	16,081	58,087	199	79,295
1994	3,224	1,161	15,269	59,437	277	79,366
1995	3,246	1,438	16,033	59,655	268	80,641
1996	3,235	1,415	11,665	60,738	306	77,361
1997	3,151	1,491	14,860	63,555	457	83,514
1998	2,847	1,941	13,089	67,249	809	85,935
1999	3,038	1,474	11,871	69,514	807	86,705
2000	3,262	1,277	13,451	70,763	716	89,469
2001	2,418	1,223	12,220	70,806	483	87,150

*Figures do not necessarily sum to totals due to independent rounding.
Source: Energy Information Administration, *State Energy Data Report*.

Figure 3.13

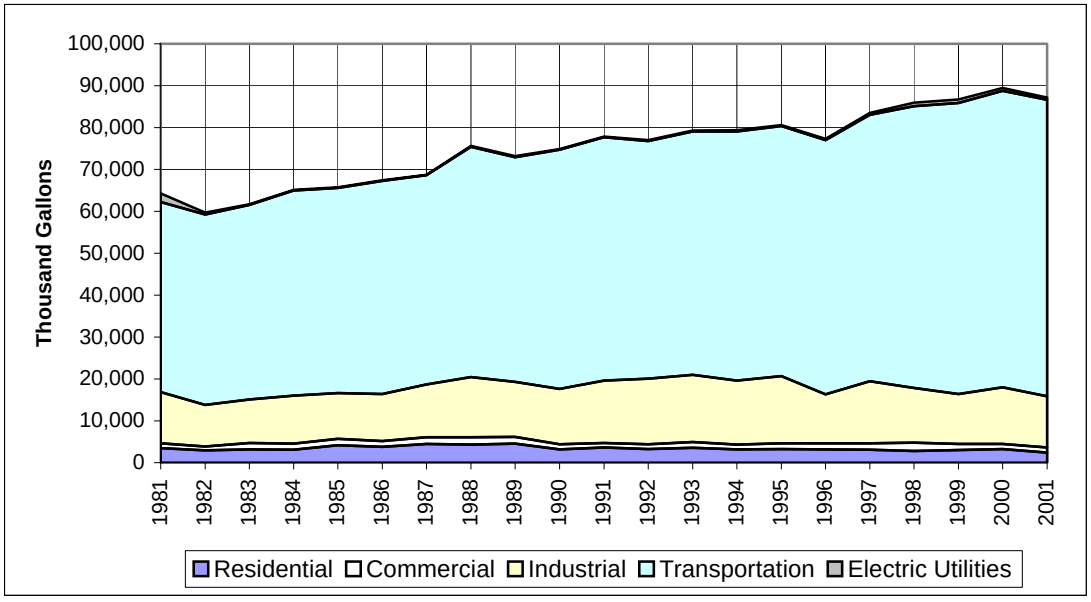
South Carolina Petroleum Consumption by Economic Sector, 2001



Source: Energy Information Administration, *State Petroleum Database.*

Figure 3.14

South Carolina Petroleum Consumption by Economic Sector, 1981-2001



Source: Energy Information Administration, *State Petroleum Database.*

Distillate Fuel Oil Consumption

Distillate fuel oil consumption in South Carolina increased 77.4% during the period 1982 to 2002. As expected, the largest increase occurred in the transportation sector with 141.8%, followed by the commercial sector with an increase of 59.4%. Significant decreases were experienced in both the residential and industrial sectors during this same period. As Figure 3.10 illustrates, the transportation sector accounted for 91.7% of all distillate fuel oil consumed in South Carolina in 2002.

Table 3.12

South Carolina Consumption of Distillate Fuel Oil by End-Use, 1982-2002

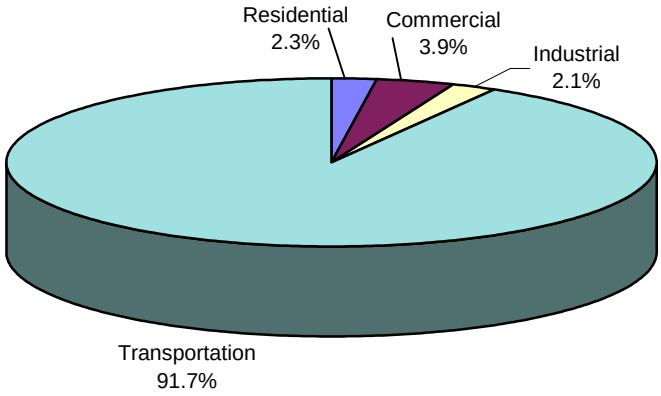
(Million Gallons)

Year	Residential	Commercial	Industrial	Transportation	TOTAL	Percent Change
1982	47.6	17.0	63.0	262.6	390.2	-0.3%
1983	49.3	34.9	61.8	291.6	437.6	12.1%
1984	50.6	35.8	63.4	327.6	477.4	9.1%
1985	48.4	35.3	71.3	329.9	484.9	1.6%
1986	49.3	29.5	64.3	343.2	486.3	0.3%
1987	58.8	36.4	58.6	339.1	492.9	1.4%
1988	47.0	44.3	70.2	359.8	521.3	5.8%
1989	53.8	38.8	80.1	341.5	514.2	-1.4%
1990	42.4	25.5	81.9	455.9	605.7	17.8%
1991	41.9	22.0	88.3	484.5	636.7	5.1%
1992	29.0	28.2	74.7	439.1	571.0	-10.3%
1993	34.9	35.6	65.7	431.2	567.4	-0.6%
1994	28.0	27.3	56.2	528.8	640.3	12.8%
1995	28.1	40.7	77.4	471.2	617.4	-3.6%
1996	30.3	41.1	90.5	482.1	644.0	4.3%
1997	23.3	45.6	21.0	514.3	604.2	-6.2%
1998	20.3	64.3	23.3	524.4	632.3	4.7%
1999	21.2	44.0	31.7	603.4	700.3	10.8%
2000	19.4	30.4	23.7	633.3	706.8	0.9%
2001	17.0	31.1	30.5	619.0	697.6	-1.3%
2002	15.6	27.1	14.5	635.0	692.2	-0.8%

Note: The term distillate fuel includes products known as No. 1, No. 2, and No. 4 fuel oils and No. 1, No. 2, and No. 4 diesel fuels.
Sources: Energy Information Administration, *Fuel Oil and Kerosene Sales Database*.

Figure 3.15

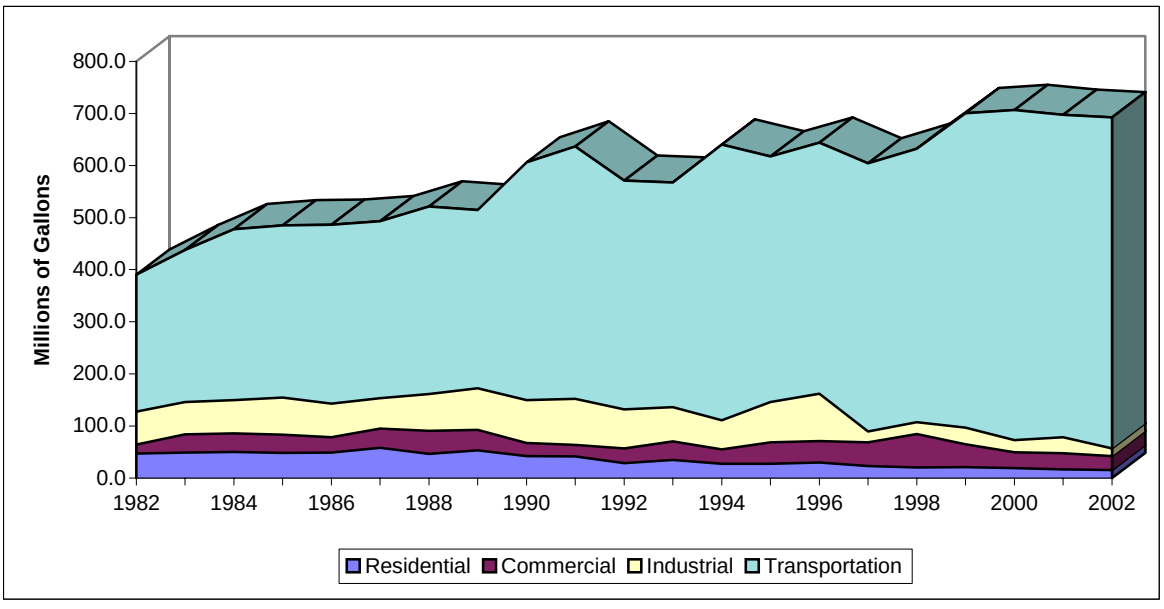
South Carolina Distillate Fuel Oil Consumption by Sector, 2002



Source: Energy Information Administration, *Fuel Oil and Kerosene Sales Database*.

Figure 3.16

South Carolina Consumption of Distillate Fuel Oil by Sector, 1982-2002



Source: Energy Information Administration, *Fuel Oil and Kerosene Sales Database*.

South Carolina Kerosene Consumption

Kerosene consumption in South Carolina has been gradually declining over the past 20 years, experiencing a 50.8% decrease from 1980 to 2000. In 2000, as Figure 3.12 indicates, the residential sector accounted for 77.4% of all kerosene consumption in South Carolina, followed by the industrial sector with 14.3% and the commercial sector with 8.2% of the total.

Table 3.13

South Carolina Consumption of Kerosene by End-Use

1982-2002

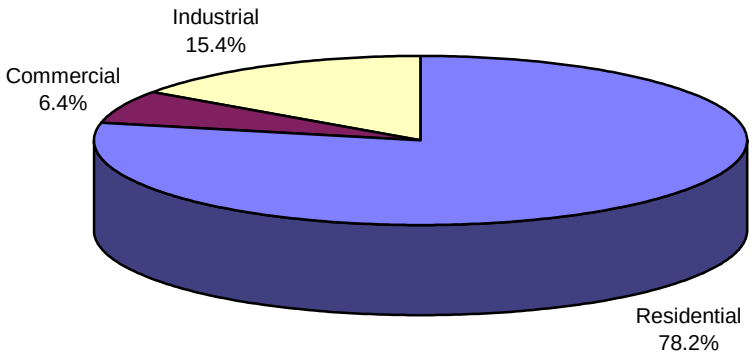
(Million Gallons)

Year	Residential	Commercial	Industrial	TOTAL	Percent Change
1982	22.0	1.0	2.3	25.3	-11.2%
1983	21.2	1.0	4.4	26.6	5.1%
1984	15.4	0.5	2.0	17.9	-32.7%
1985	50.9	2.0	9.4	62.3	248.0%
1986	41.7	2.3	5.6	49.6	-20.4%
1987	48.5	2.2	6.4	57.1	15.1%
1988	25.8	1.0	7.4	34.2	-40.1%
1989	24.3	3.0	7.1	34.4	0.6%
1990	15.2	0.5	4.0	19.7	-42.7%
1991	20.3	0.5	4.6	25.4	28.9%
1992	18.5	0.6	2.9	22.0	-13.4%
1993	27.1	0.8	3.9	31.8	44.5%
1994	15.6	1.1	3.2	19.9	-37.4%
1995	19.7	1.1	3.2	24.0	20.6%
1996	23.5	1.0	3.7	28.2	17.5%
1997	25.6	0.7	2.6	28.9	2.5%
1998	28.5	2.0	4.2	34.7	20.1%
1999	23.2	1.3	3.0	27.5	-20.7%
2000	21.6	2.3	4.0	27.9	1.5%
2001	21.0	1.7	3.9	26.6	-4.7%
2002	12.2	1.0	2.4	15.6	-41.4%

Source: Energy Information Administration, *State Energy Data Report* and *Fuel Oil and Kerosene Sales*.

Figure 3.17

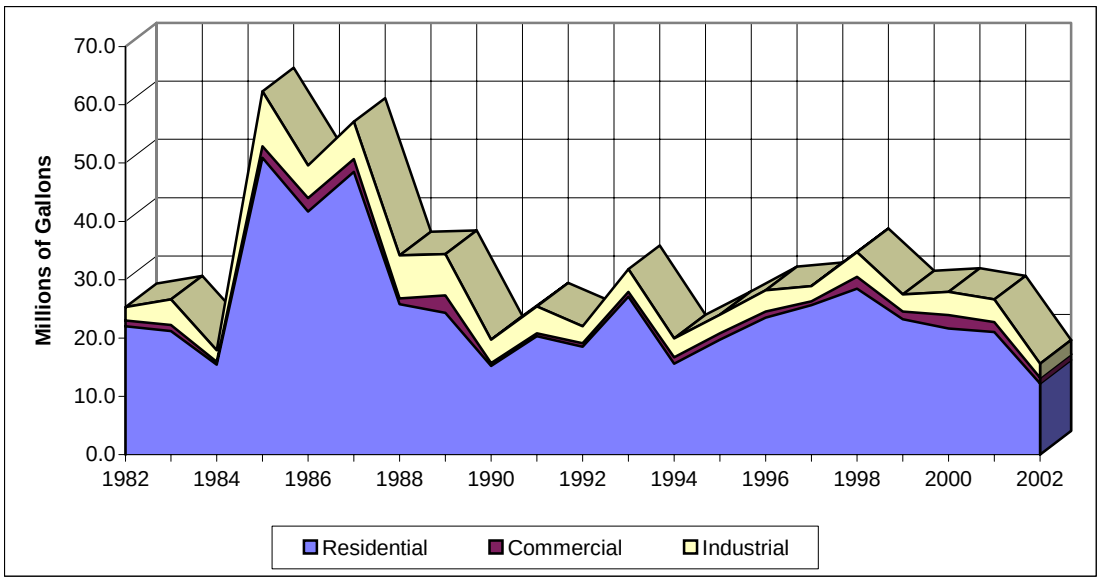
South Carolina Kerosene Consumption by Sector, 2002



Source: Energy Information Administration, *Fuel Oil and Kerosene Sales Database*.

Figure 3.18

South Carolina Kerosene Consumption by Sector, 1982-2002



Source: Energy Information Administration, *Fuel Oil and Kerosene Sales Database*.

Selected Fuel Oil Prices in South Carolina

South Carolina prices to end users for No. 2 distillate fuel oil increased by 16.9% during the period 1983 to 2003, and rose by 32% from 2002 to 2003. From 1983 to 2003, kerosene prices increased by 26.2% and 31.9% from 2002 to 2003. Residual fuel price data was incomplete for 2003.

Table 3.14

South Carolina Prices of No. 2 Distillate, Kerosene, and Residual Fuel Oils, 1983-2003
(Cents per Gallon excluding Taxes)

Year	No. 2 Distillate			Kerosene			Residual Fuel		
	Sales to End Users	Percent Change	Sales for Resales	Sales to End Users	Percent Change	Sales for Resales	Sales to End Users	Percent Change	Sales for Resales
1983	84.0	N/A	81.9	105.4	N/A	89.6	62.6	N/A	*
1984	83.3	-0.8%	81.6	108.5	2.9%	91.4	69.4	10.9%	68.9
1985	79.0	-5.2%	77.5	102.0	-6.0%	88.0	64.1	-7.6%	64.0
1986	47.7	-39.6%	46.4	90.1	-11.7%	62.5	38.1	-40.6%	44.6
1987	55.0	15.3%	53.0	100.5	11.5%	58.8	42.4	11.3%	*
1988	49.7	-9.6%	47.0	93.4	-7.1%	55.5	34.2	-19.3%	30.5
1989	57.3	15.3%	55.7	91.4	-2.1%	67.3	40.0	17.0%	38.2
1990	73.8	28.8%	69.0	110.8	21.2%	87.7	46.3	15.8%	37.3
1991	64.9	-12.1%	62.4	126.7	14.4%	75.8	36.9	-20.3%	*
1992	61.0	-6.0%	58.7	111.1	-12.3%	65.5	37.2	0.8%	**
1993	58.7	-3.8%	55.0	N/A	N/A	61.6	*	N/A	*
1994	54.6	-7.0%	51.0	N/A	N/A	60.5	*	N/A	*
1995	55.3	1.3%	51.8	93.8	N/A	57.2	*	N/A	37.2
1996	67.1	21.3%	63.5	100.3	6.9%	71.0	48.7	N/A	*
1997	63.3	-5.7%	58.3	106.3	6.0%	65.7	45.6	-6.4%	41.1
1998	47.6	-24.8%	42.6	91.5	-13.9%	48.8	*	N/A	30.2
1999	55.8	17.2%	50.5	84.0	-8.2%	52.4	*	N/A	31.7
2000	91.5	64.0%	87.5	124.8	48.6%	105.0	*	N/A	*
2001	82.2	-10.2%	75.7	100.7	-19.3%	89.1	*	N/A	*
2002	74.4	-9.5%	71.0	100.8	0.1%	75.9	*	N/A	56.5
2003	98.2	32.0%	87.2	133.0	31.9%	103.7	71.0	N/A	N/A

Note: No. 2 distillate includes No. 2 fuel oil and/or No. 2 diesel fuel.
*Withheld to avoid disclosure of individual company data.
**No data reported.
Source: Energy Information Administration, *Petroleum Marketing Annual*.

No. 2 Distillate Prices

The average prices for No. 2 distillate increased by 103.5% during the period 1994 to 2004. Residential sector prices increased by 68.7%, commercial sector prices rose by 113.2%, industrial sector prices increased by 106.3%, retail outlet prices increased by 105.8%, and all other sectors experienced a rise of 98.1%.

Table 3.15

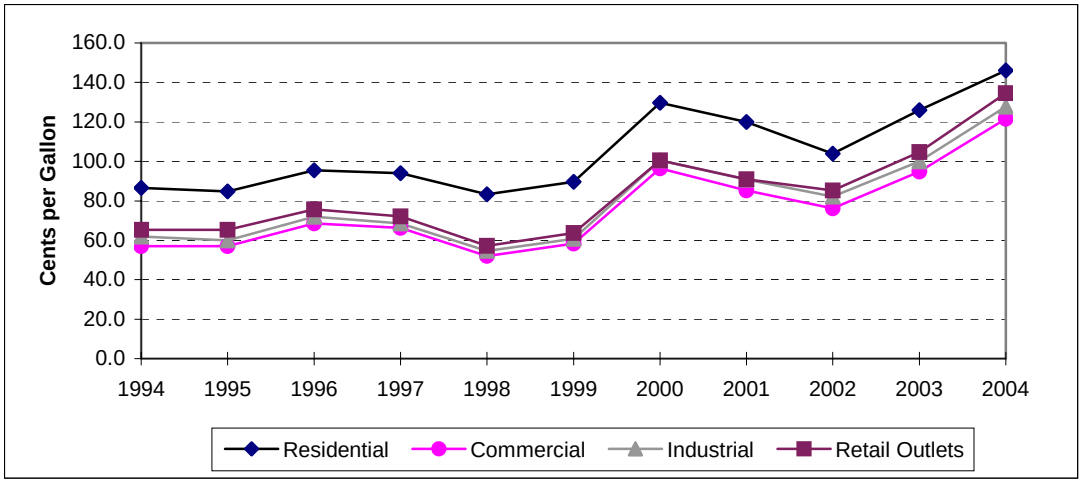
South Carolina No. 2 Distillate Prices by Sales Type, 1994-2004
(Cents per Gallon Excluding Taxes)

Year	Residential	Commercial	Industrial	Retail Outlets	Other	Average	Percent Change
1994	86.6	57.0	61.9	65.4	63.7	63.5	-5.8%
1995	84.8	57.0	60.0	65.4	62.8	62.9	-0.9%
1996	95.5	68.5	72.0	75.7	73.6	73.9	17.5%
1997	94.1	66.3	68.5	72.2	71.3	71.0	-3.9%
1998	83.4	52.0	54.6	57.3	56.2	56.4	-20.6%
1999	89.7	58.3	60.8	63.7	61.1	62.9	11.5%
2000	129.7	96.5	100.5	100.5	99.4	101.2	60.9%
2001	120.0	85.3	90.7	90.9	91.3	90.5	-10.6%
2002	103.9	76.2	82.2	85.3	84.5	83.4	-7.8%
2003	126.0	94.9	100.0	104.7	97.3	101.9	22.2%
2004	146.1	121.5	127.7	134.6	126.2	129.2	26.8%

*These are the average annual prices for No. 2 distillate for PAD District I, Subdistrict C, which includes South Carolina (Southeast Region).
Source: Energy Information Administration, *Petroleum Marketing Annual*.

Figure 3.19

South Carolina No. 2 Distillate Prices by Sales Type, 1994-2004



Source: Energy Information Administration, *Petroleum Marketing Annual*.

Propane Prices by Economic Sectors

From 1995 to 2004, propane prices for residential consumers in South Carolina increased by 59.3%, compared with 66.9% on the national level. In the commercial/institutional sector, propane prices rose by 62.5% in South Carolina, and 62.7% in the U.S. Industrial sector prices increased by 72.8% in South Carolina, while rising by 89.3% in the nation. The price of propane sold through retail outlets was not available or withheld for several years, making a trend analysis incomplete. The total average price of propane in South Carolina during this period increased by 64.1%, and 70.8% in the U.S. Although the overall percentage increase was lower in South Carolina, the price of propane is noticeably lower on the national level.

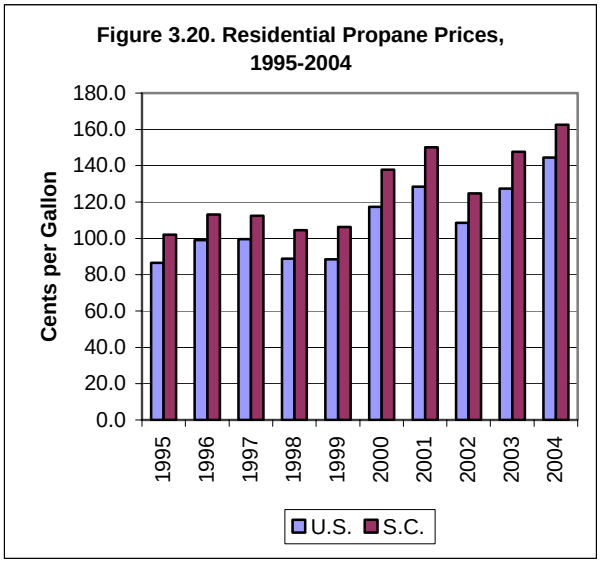
Table 3.16

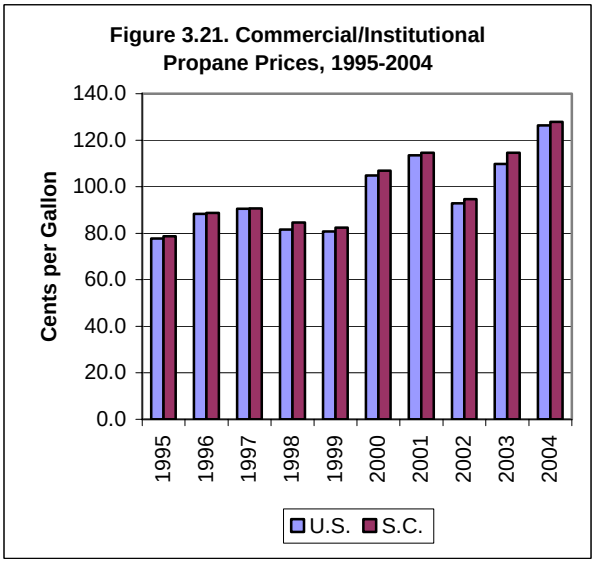
U.S. and S.C. Comparison of Propane Prices* by Sales to End Users, 1995-2004
(Cents per Gallon, excluding Taxes)

	Residential		Commercial/Institutional		Industrial		Retail Outlets		Average	
Year	U.S.	S.C.	U.S.	S.C.	U.S.	S.C.	U.S.	S.C.	U.S.	S.C.
1995	86.5	102.1	77.7	78.7	64.6	69.1	74.7	70.5	76.6	88.5
1996	99.1	113.1	88.4	88.7	73.3	78.4	75.7	73.2	88.6	99.1
1997	99.6	112.4	90.5	90.7	77.8	75.2	72.6	W	87.8	98.2
1998	88.8	104.5	81.6	84.6	69.2	67.2	67.6	W	77.4	91.2
1999	88.5	106.3	80.8	82.5	73.4	70.1	85.3	W	78.1	92.1
2000	117.3	137.7	104.8	106.9	99.0	98.8	110.4	113.0	104.8	120.9
2001	128.5	150.1	113.5	114.6	107.4	107.2	119.0	117.2	109.4	130.0
2002	108.6	124.7	92.9	94.6	92.4	91.4	104.0	101.4	95.8	109.1
2003	127.4	147.6	109.8	114.6	108.1	108.2	N/A	W	115.0	131.2
2004	144.4	162.6	126.4	127.9	122.3	119.4	W	W	130.8	145.2

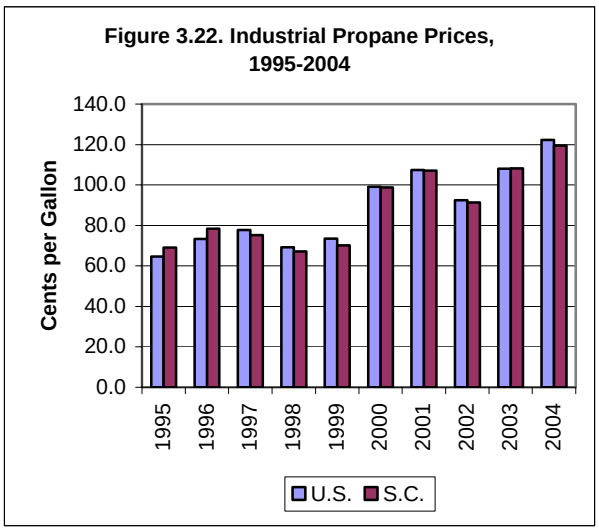
*These are the average annual prices for propane for PAD District I, Subdistrict C, which includes South Carolina (Southeast Region).
Source: Energy Information Administration, *Petroleum Marketing Annual*.

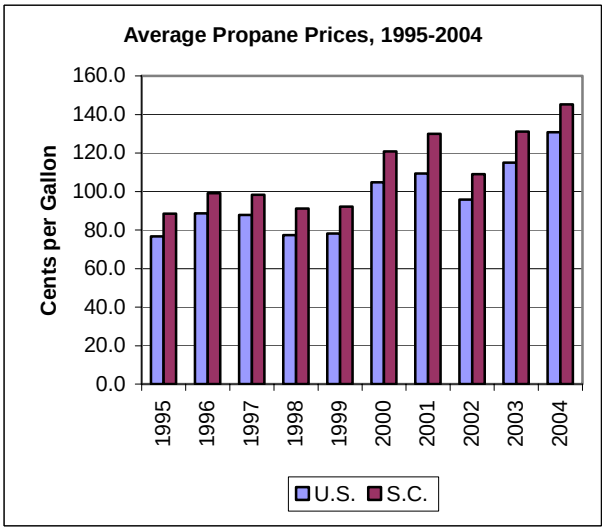
Figures 3.20 and 3.21. Residential and Commercial/Institutional Propane Prices





Figures 3.22 and 3.23. Industrial and Average Propane Prices





Source: Energy Information Administration, *Petroleum Marketing Annual*.

SECTION 4: NATURAL GAS

South Carolina Customers Served by Investor-Owned Natural Gas Utilities

The number of residential customers served by investor-owned natural gas companies increased by 123,871 (56.9%) during the period 1983 to 2003. The commercial and small industrial sectors saw customer growth of 15,321 (67.1%), and the large industrial sector experienced an increase of 176 (19.8%) in customer numbers. Altogether, there was an increase of 139,369 (56.5%) in the number of customers served by investor-owned natural gas utilities from 1983 to 2003. Natural gas sales for resale have remained relatively constant. The investor-owned natural gas companies are South Carolina Electric and Gas, South Carolina Pipeline Corporation, Piedmont Natural Gas, and United Cities Gas Company.

Table 4.1

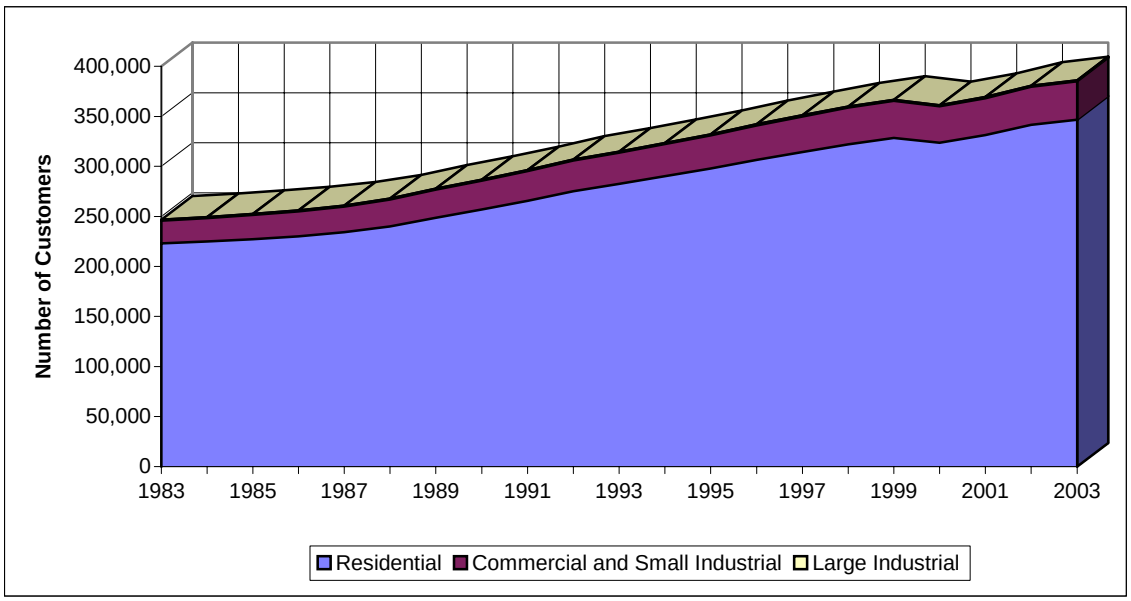
South Carolina Customers Served by Investor-Owned Natural Gas Utilities, 1983-2003

Year	Residential	Commercial and Small Industrial	Large Industrial	Sales for Resale	Total Customers	Percent Change
1983	222,952	22,837	890	12	246,691	1.1%
1984	224,976	23,460	892	13	249,341	1.1%
1985	227,336	24,041	926	21	252,324	1.2%
1986	230,192	24,792	976	22	255,982	1.4%
1987	234,138	25,805	932	25	260,900	1.9%
1988	239,974	26,852	899	16	267,741	2.6%
1989	248,722	27,938	903	16	277,579	3.7%
1990	256,902	28,727	906	16	286,551	3.2%
1991	265,626	29,734	910	16	296,286	3.4%
1992	275,259	30,622	906	16	306,803	3.5%
1993	282,551	31,438	917	16	314,922	2.6%
1994	290,080	32,299	952	15	323,346	2.7%
1995	297,878	33,233	1,085	15	332,211	2.7%
1996	306,636	34,480	1,094	15	342,225	3.0%
1997	314,554	35,570	1,140	15	351,279	2.6%
1998	322,313	36,471	1,171	15	359,970	2.5%
1999	328,400	37,118	1,114	15	366,647	1.9%
2000	323,733	36,378	1,085	14	361,210	-1.5%
2001	331,351	36,973	1,083	14	369,421	2.3%
2002	341,583	38,007	1,114	13	380,717	3.1%
2003	346,823	38,158	1,066	13	386,060	1.4%

*Note: This table does not include data from publicly-owned natural gas companies since its availability was limited to a short time span. This was not conducive to a viable trend analysis. Future editions of this report may contain such data.
Source: South Carolina Public Service Commission.

Figure 4.1

South Carolina Customers Served by Investor-Owned Natural Gas Utilities by Sector, 1983-2003



Source: South Carolina Public Service Commission.

South Carolina Annual Deliveries from All Natural Gas Utilities to End-Use Customers

End-use deliveries from all natural gas utilities in South Carolina, both investor-owned and public, were 34.2% higher in 2004 than in 1980. On a comparative level, the industrial sector accounted for 50.3% of all natural gas deliveries in South Carolina in 2004, while accounting for 35.6% in the United States. The residential sector in South Carolina comprised 18.6% of all deliveries, as compared with 23.8% nationwide. The utilities sector in South Carolina received only 16.9% of deliveries, while accounting for 26% on the national level.

Table 4.2

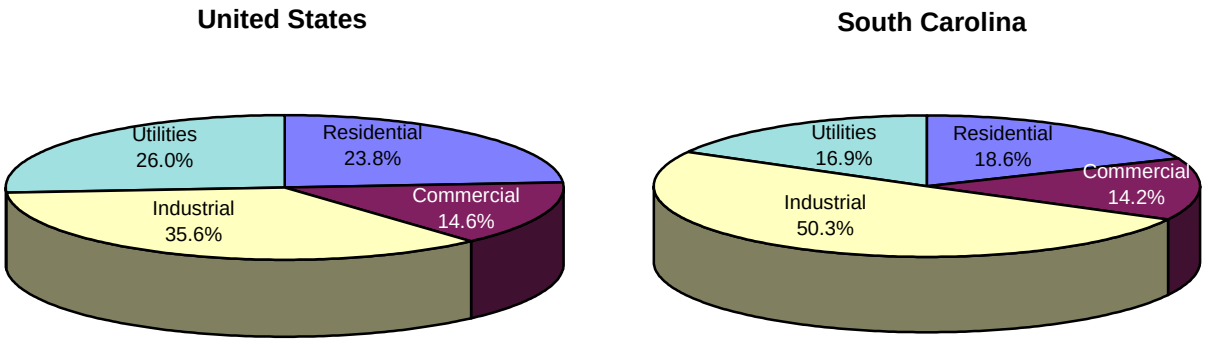
South Carolina Annual Deliveries of Natural Gas to End-Use Customers, 1980-2004
(Million Cubic Feet)

Year	Residential	Commercial	Industrial	Utilities	Total	Percent Change
1980	19,932	15,174	75,234	5,783	116,123	N/A
1981	20,210	15,682	73,478	5,314	114,684	-1.2%
1982	18,347	15,844	63,086	546	97,823	-14.7%
1983	19,101	16,540	61,659	597	97,897	0.1%
1984	19,048	16,555	68,240	268	104,111	6.3%
1985	16,435	15,271	63,038	484	95,228	-8.5%
1986	18,103	15,421	59,106	1,387	94,017	-1.3%
1987	20,200	17,195	63,340	538	101,273	7.7%
1988	20,648	17,290	69,575	2,378	109,891	8.5%
1989	20,262	16,250	73,911	2,705	113,128	2.9%
1990	18,623	16,032	87,912	6,975	129,542	14.5%
1991	19,611	15,795	85,790	9,824	131,020	1.1%
1992	22,934	16,644	94,328	1,794	135,700	3.6%
1993	24,093	16,764	94,892	1,850	137,599	1.4%
1994	23,484	17,870	97,501	3,004	141,859	3.1%
1995	25,164	18,868	98,332	6,615	148,979	5.0%
1996	29,406	20,329	95,493	1,206	146,434	-1.7%
1997	25,475	20,713	115,115	2,731	164,034	12.0%
1998	25,315	19,886	104,878	5,895	155,974	-4.9%
1999	25,681	20,547	102,464	5,119	155,811	-1.2%
2000	29,109	21,928	96,846	2,808	150,691	-2.2%
2001	27,485	20,743	79,674	10,944	138,846	-7.9%
2002	27,757	21,328	97,673	36,774	183,532	32.2%
2003	29,370	22,124	73,050	16,468	141,012	-23.2%
2004	29,014	22,203	78,374	26,262*	155,851	10.5%

*Projected estimate.
Source: Energy Information Administration, *Natural Gas Annual* and *Natural Gas Monthly*.

Figure 4.2

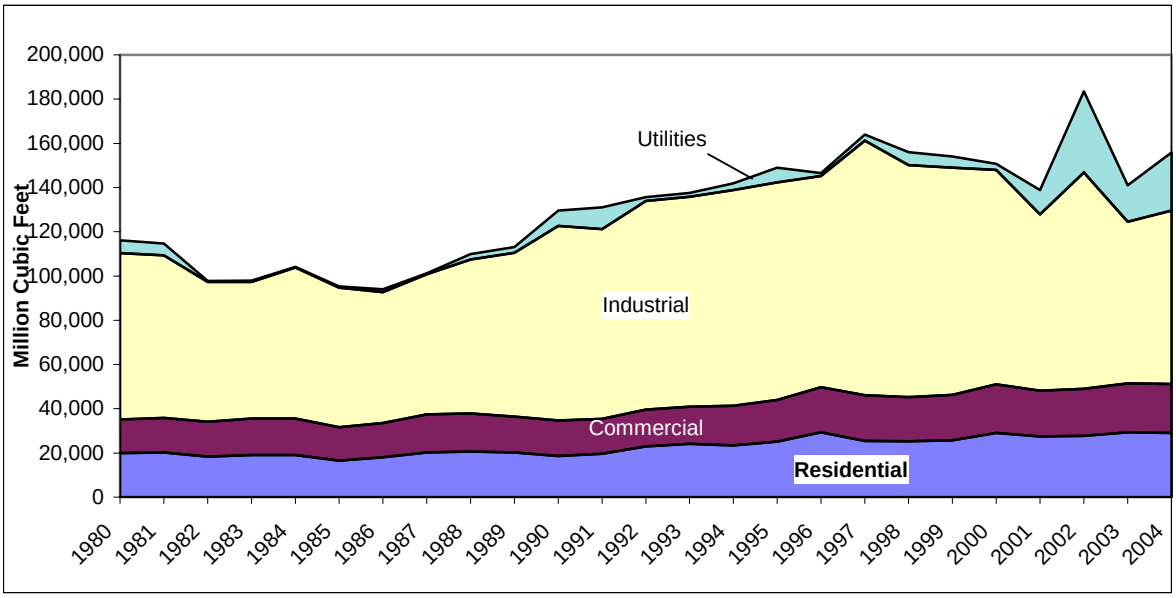
United States and South Carolina Annual Deliveries of Natural Gas from all Utilities to End-Use Customers, 2004



Source: Energy Information Administration, Natural Gas Annual; *Natural Gas Monthly;* and *Natural Gas Database.*

Figure 4.3

South Carolina Annual Deliveries of Natural Gas from all Utilities to End-Use Customers, 1980-2004



Source: Energy Information Administration, *Natural Gas Annual; Natural Gas Monthly*; and *Natural Gas Database*.

South Carolina Monthly Deliveries of Natural Gas

Table 4.3

South Carolina Monthly Deliveries of Natural Gas from All Utilities to End-Use Customers, 1993-2004

(Million Cubic Feet)

1993

Month	Residential	Commercial	Industrial	Electric Utilities	TOTAL
Jan	4,232	2,225	7,909	17	14,383
Feb	4,247	2,114	7,408	20	13,789
Mar	4,230	2,158	8,723	69	15,180
Apr	2,532	1,478	7,967	21	11,998
May	947	988	7,301	24	9,260
Jun	495	861	7,884	311	9,551
Jul	402	826	7,449	806	9,483
Aug	373	834	8,188	417	9,812
Sep	387	830	7,195	132	8,544
Oct	624	983	8,487	6	10,100
Nov	2,009	1,436	8,801	10	12,256
Dec	3,615	2,031	7,580	17	13,243
TOTAL	24,093	16,764	94,892	1,850	137,599
%TOTAL	17.5%	12.2%	69.0%	1.3%	100.0%

1994

Month	Residential	Commercial	Industrial	Electric Utilities	TOTAL
Jan	5,993	2,931	6,160	6	15,090
Feb	4,965	2,547	6,891	19	14,422
Mar	3,022	1,968	9,089	28	14,107
Apr	1,525	1,235	8,497	53	11,310
May	713	1,062	8,095	86	9,956
Jun	528	1,387	8,433	329	10,677
Jul	438	946	7,546	38	8,968
Aug	429	985	8,569	11	9,994
Sep	444	983	8,625	63	10,115
Oct	734	1,130	10,417	1,074	13,355
Nov	1,589	1,411	9,636	632	13,268
Dec	3,088	1,897	9,360	665	15,010
TOTAL	23,468	18,482	101,318	3,004	146,272
%TOTAL	16.0%	12.6%	69.3%	2.1%	100.0%

1995

Month	Residential	Commercial	Industrial	Electric Utilities	TOTAL
Jan	4,919	2,628	7,001	7	14,555
Feb	5,128	2,651	6,975	3	14,757
Mar	3,604	2,101	10,075	695	16,475
Apr	1,584	1,380	8,702	7	11,673
May	746	1,043	8,954	185	10,928
Jun	510	979	9,437	471	11,397
Jul	472	949	7,836	825	10,082
Aug	397	954	8,498	1,897	11,746
Sep	474	1,040	8,138	1,441	11,093
Oct	646	1,052	8,338	1,064	11,100
Nov	2,262	1,669	8,287	10	12,228
Dec	4,422	2,385	6,963	12	13,782
TOTAL	25,164	18,831	99,204	6,617	149,816
%TOTAL	16.8%	12.6%	66.2%	4.4%	100.0%

1996

Month	Residential	Commercial	Industrial	Electric Utilities	TOTAL
Jan	6,539	3,092	6,107	4	15,742
Feb	5,887	2,743	6,330	5	14,965
Mar	3,706	2,160	7,668	9	13,543
Apr	2,968	1,858	8,275	9	13,110
May	945	1,424	8,236	189	10,794
Jun	542	1,270	7,826	279	9,917
Jul	421	927	7,710	239	9,297
Aug	415	950	7,991	64	9,420
Sep	472	1,033	7,925	350	9,780
Oct	792	1,150	8,800	23	10,765
Nov	2,148	1,631	8,603	16	12,398
Dec	4,295	2,414	8,462	20	15,191
TOTAL	29,130	20,652	93,933	1,207	144,922
%TOTAL	20.1%	14.3%	64.8%	0.8%	100.0%

1997

Month	Residential	Commercial	Industrial	Electric Utilities	TOTAL
Jan	5,097	2,799	8,152	11	16,059
Feb	4,994	2,689	8,054	4	15,741
Mar	2,592	1,816	9,152	12	13,572
Apr	1,776	1,379	9,260	72	12,487
May	1,230	1,278	9,122	67	11,697
Jun	701	1,214	8,451	621	10,987
Jul	512	997	17,104	922	19,535
Aug	444	1,019	10,653	422	12,538
Sep	466	1,904	8,883	212	11,465
Oct	631	1,176	8,239	240	10,286
Nov	2,399	1,771	8,702	112	12,984
Dec	4,634	2,671	9,344	35	16,684
TOTAL	25,476	20,713	115,116	2,730	164,035
%TOTAL	15.5%	12.6%	70.2%	1.7%	100.0%

1998

Month	Residential	Commercial	Industrial	Electric Utilities	TOTAL
Jan	5,432	2,955	9,645	33	18,065
Feb	5,177	2,781	9,129	11	17,098
Mar	4,006	2,440	9,121	106	15,673
Apr	2,421	1,732	8,159	37	12,349
May	1,071	1,209	8,713	687	11,680
Jun	562	1,063	8,464	1,413	11,502
Jul	474	1,013	7,613	1,239	10,339
Aug	463	1,019	8,389	1,238	11,109
Sep	491	1,055	8,475	919	10,940
Oct	606	1,148	8,837	73	10,664
Nov	1,754	1,531	9,092	97	12,474
Dec	2,858	1,940	9,241	42	14,081
TOTAL	25,315	19,886	104,878	5,895	155,974
%TOTAL	16.2%	12.7%	67.2%	3.8%	100.0%

1999

Month	Residential	Commercial	Industrial	Electric Utilities	TOTAL
Jan	5,687	2,957	8,813	14	17,471
Feb	3,588	2,236	8,225	21	14,070
Mar	4,369	2,549	9,610	49	16,577
Apr	2,223	1,720	8,494	110	12,547
May	1,193	1,337	8,152	76	10,758
Jun	569	1,103	7,716	390	9,778
Jul	491	1,120	7,798	2,296	11,705
Aug	448	1,067	7,940	1,855	11,310
Sep	487	1,148	8,089	166	9,890
Oct	734	1,230	8,979	17	10,960
Nov	2,093	1,682	9,250	77	13,102
Dec	3,799	2,398	9,398	48	15,643
TOTAL	25,681	20,547	102,464	5,119	153,811
%TOTAL	16.7%	13.4%	66.6%	3.3%	100.0%

2000

Month	Residential	Commercial	Industrial	Electric Utilities	TOTAL
Jan	5,552	2,948	8,493	35	17,028
Feb	6,438	3,190	8,630	15	18,273
Mar	2,877	2,047	9,720	27	14,671
Apr	1,917	1,644	9,128	68	12,757
May	1,140	1,356	8,814	571	11,881
Jun	576	1,168	7,262	719	9,725
Jul	494	1,111	7,562	548	9,715
Aug	468	1,101	7,992	650	10,211
Sep	536	1,161	7,041	75	8,813
Oct	1,011	1,332	7,672	31	10,046
Nov	2,032	1,773	8,208	55	12,068
Dec	6,068	3,097	6,324	14	15,503
TOTAL	29,109	21,928	96,846	2,808	150,691
%TOTAL	19.3%	14.6%	64.3%	1.9%	100.0%

2001

Month	Residential	Commercial	Industrial	Electric Utilities	TOTAL
Jan	7,919	3,589	4,712	23	16,243
Feb	4,689	2,542	5,548	8	12,787
Mar	3238	2,195	6,657	10	12,100
Apr	2,620	1,834	6,097	47	10,598
May	992	1,317	6,103	95	8,507
Jun	567	1,109	6,245	280	8,201
Jul	492	1,067	6,652	357	8,568
Aug	470	1,063	7,129	524	9,186
Sep	512	1,117	6,827	62	8,518
Oct	887	1,300	8,408	801	11,396
Nov	2,054	1,597	7,229	52	10,932
Dec	2,516	1,868	7,761	51	12,196
TOTAL	26,956	20,598	79,368	2,310	129,232
%TOTAL	20.9%	15.9%	61.4%	1.8%	100.0%

2002

Month	Residential	Commercial	Industrial	Electric Utilities	TOTAL
Jan	5,926	3,016	8,691	2,953	20,586
Feb	4,632	2,739	8,504	2,013	17,888
Mar	4,261	2,461	8,645	1,252	16,619
Apr	1,901	1,607	8,133	2,914	14,555
May	832	1,284	8,296	4,534	14,946
Jun	721	1,162	8,224	4,922	15,029
Jul	538	1,081	7,696	7,031	16,346
Aug	482	1,047	7,740	6,601	15,870
Sep	499	1,123	7,288	2,794	11,704
Oct	610	1,192	8,115	1,100	11,017
Nov	2,040	1,715	8,339	382	12,476
Dec	5,315	2,901	8,002	278	16,496
TOTAL	27,757	21,328	97,673	36,774	183,532
%TOTAL	15.1%	11.6%	53.2%	20.0%	100.0%

2003

Month	Residential	Commercial	Industrial	Electric Utilities	TOTAL
Jan	6,392	3,397	7,261	2,639	19,689
Feb	6,450	3,193	6,769	816	17,228
Mar	4,172	2,326	5,625	413	12,536
Apr	2,231	1,747	6,453	1,437	11,868
May	1,160	1,409	6,016	1,202	9,787
Jun	630	1,144	5,082	1,352	8,208
Jul	532	1,140	5,475	2,703	9,850
Aug	494	1,136	5,834	4,276	11,740
Sep	496	1,154	5,972	652	8,274
Oct	737	1,330	6,028	302	8,397
Nov	1,644	1,543	6,130	233	9,550
Dec	4,432	2,605	6,405	443	13,885
TOTAL	29,370	22,124	73,050	16,468	141,012
%TOTAL	20.8%	15.7%	51.8%	11.7%	100.0%

2004

Month	Residential	Commercial	Industrial	Electric Utilities	TOTAL
Jan	6,455	3,311	6,988	1,870	18,624
Feb	6,908	3,491	6,900	1,790	19,089
Mar	4,371	2,541	7,094	704	14,710
Apr	2,279	1,777	6,489	990	11,535
May	908	1,307	6,347	3,721	12,283
Jun	550	1,173	6,046	2,622	10,391
Jul	495	1,154	6,055	4,121	11,825
Aug	474	1,178	6,419	4,260	12,331
Sep	510	1,162	6,408	2,852	10,932
Oct	591	1,251	6,535	1,315	9,692
Nov	1,465	1,501	6,423	1,017	10,406
Dec	4,008	2,355	6,670	1,000	14,033
TOTAL	29,014	22,201	78,374	26,262	155,851
%TOTAL	18.6%	14.2%	50.3%	16.9%	100.0%

Source: Energy Information Administration, *Natural Gas Monthly; Natural Gas Database.*

South Carolina Natural Gas Service from Investor-Owned Companies to Residential Customers

The number of residential customers receiving natural gas service from privately-owned companies (South Carolina Pipeline Corporation does not service residential customers) increased by 55.6% from 1983 to 2003. Natural gas sales to residential customers increased by 32%, and the average use per residential customer (in million cubic feet) decreased by 15.2%. With the increase in natural gas prices, this decrease in natural gas use per residential customer could indicate the adoption of energy efficiency measures in South Carolina homes.

Table 4.4

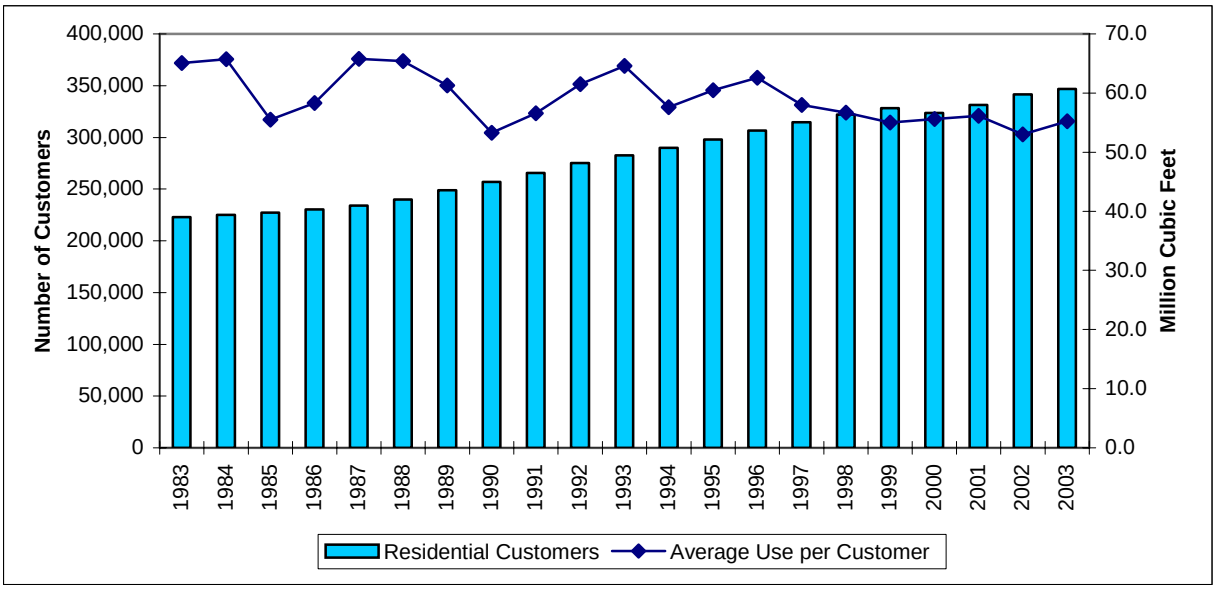
Natural Gas Service from Investor-Owned Companies to Residential Customers in South Carolina, 1983-2003
(In Million Cubic Feet)

Year	Residential Customers	Residential Gas Sales (mcf)	Average Use per Customer (mcf)
1983	222,952	14,501,623	65.1
1984	224,976	14,771,137	65.7
1985	227,336	12,609,989	55.5
1986	230,192	13,424,281	58.3
1987	234,138	14,405,117	65.8
1988	239,974	15,687,512	65.4
1989	248,722	15,237,798	61.3
1990	256,902	13,697,251	53.3
1991	265,626	15,041,167	56.6
1992	275,259	16,919,438	61.5
1993	282,551	18,253,313	64.6
1994	290,080	16,700,986	57.6
1995	297,878	18,023,288	60.5
1996	306,636	19,184,739	62.6
1997	314,554	18,238,295	58.0
1998	322,030	18,250,454	56.7
1999	328,400	18,077,412	55.0
2000	323,733	18,000,859	55.6
2001	331,351	18,613,145	56.2
2002	341,583	18,103,601	53.0
2003	346,823	19,149,253	55.2

Source: South Carolina Public Service Commission.

Figure 4.4

Number of South Carolina Residential Natural Gas Customers Serviced by Investor-Owned Companies and Average Use per Customer, 1983-2003



Source: South Carolina Public Service Commission.

Number of Consumers and Average Annual Consumption per Consumer in South Carolina

Table 4.5 provides the number of consumers and average annual consumption per consumer for all natural gas utilities in South Carolina, not just investor-owned utilities. In the residential sector, the number of residential customers increased by 158,544 (44.3%) from 1992 to 2003, and the average consumption per consumer decreased by 11.1%. Commercial sector customers increased by 14,941 (36.5%), and the average consumption per consumer fell by 1.5%. The Industrial sector had an increase of only 6 customers (0.4%), with the average consumption per consumer dropping by 16.8%.

Table 4.5

Number of Consumers and Average Annual Consumption per Consumer for all Natural Gas Utilities in South Carolina, 1992-2003

Year	Residential		Commercial		Industrial	
	Number of Consumers	Average Consumption per Consumer (thousand cubic feet)	Number of Consumers	Average Consumption per Consumer (thousand cubic feet)	Number of Consumers	Average Consumption per Consumer (thousand cubic feet)
1992	357,818	63	40,968	406	1,568	60,158
1993	370,411	66	42,191	403	1,625	58,804
1994	416,773	56	45,487	393	1,928	50,571
1995	412,259	61	47,293	399	1,802	54,568
1996	426,088	69	48,650	418	1,759	54,288
1997	443,093	58	50,817	385	1,764	58,350
1998	460,141	55	52,237	380	1,728	59,215
1999	473,799	54	53,436	385	1,768	58,051
2000	489,340	59	54,794	403	1,715	56,732
2001	501,161	55	55,257	375	1,702	48,812
2002	508,686	55	55,608	378	1,563	61,592
2003	516,362	56	55,909	400	1,574	50,068

Source: Energy Information Administration, *Historical Natural Gas Annual*.

Average Price Comparison of Natural Gas Deliveries to South Carolina and United States End-Use Consumers

South Carolina natural gas prices rose by $5.84 (88.2%) per thousand cubic feet from 1984 to 2004 in the residential sector as compared to $4.62 for the United States average. In the commercial sector, South Carolina natural gas prices increased by $4.58 (78.2%) per thousand cubic feet with the average United States prices increasing by $3.74. The industrial sector in South Carolina experienced an increase of $2.69 (53.4%) per thousand cubic feet with an increase of $2.18 for the United States. The price of natural gas deliveries to South Carolina and U.S. electric utilities was not available for 2004. Overall, South Carolina prices of natural gas deliveries to end-use consumers are considerably higher than the United States average in all but the industrial sector.

Table 4.6

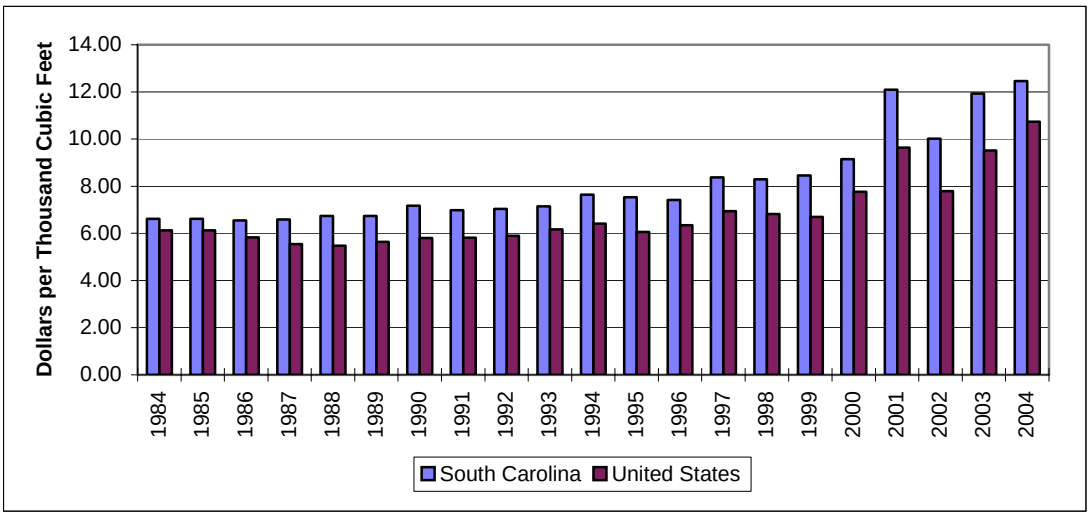
Average Price Comparison of Natural Gas Delivered to South Carolina and U.S. Residential, Commercial, Industrial and Electric Utilities Consumers, 1984-2004
(Dollars per Thousand Cubic Feet)

	Residential		Commercial		Industrial		Electric Utilities	
Year	**S.C.**	**U.S.**	**S.C.**	**U.S.**	**S.C.**	**U.S.**	**S.C.**	**U.S.**
1984	6.62	6.12	5.86	5.55	5.04	4.22	4.51	3.70
1985	6.62	6.12	5.76	5.50	4.70	3.95	4.67	3.55
1986	6.54	5.83	5.63	5.08	3.73	3.23	2.27	2.43
1987	6.59	5.54	5.60	4.77	3.93	2.94	3.45	2.32
1988	6.73	5.47	5.59	4.63	3.43	2.95	1.86	2.33
1989	6.73	5.64	5.65	4.74	3.46	2.96	2.27	2.43
1990	7.17	5.80	5.90	4.83	3.35	2.93	1.76	2.38
1991	6.98	5.82	5.56	4.81	2.95	2.69	1.53	2.18
1992	7.03	5.89	5.65	4.88	3.13	2.84	1.73	2.36
1993	7.14	6.16	5.82	5.22	3.35	3.07	2.97	2.61
1994	7.65	6.41	6.11	5.44	3.32	3.05	1.71	2.28
1995	7.54	6.06	6.09	5.05	3.11	2.71	1.64	2.02
1996	7.41	6.34	6.26	5.40	3.77	3.42	4.56	2.69
1997	8.37	6.94	6.74	5.79	3.72	3.59	4.07	2.74
1998	8.30	6.82	6.48	5.48	3.29	3.14	3.62	2.40
1999	8.46	6.69	6.54	5.33	3.39	3.10	3.57	2.62
2000	9.15	7.76	7.72	6.59	4.93	4.48	5.72	4.38
2001	12.09	9.64	10.03	8.43	5.55	5.28	4.87	4.61
2002	10.02	7.79	7.89	6.70	4.52	4.01	5.16	3.77
2003	11.93	9.51	9.97	8.26	6.96	5.78	N/A	5.55
2004	12.46	10.74	10.44	9.29	7.73	6.40	N/A	N/A

Source: Energy Information Administration, *Historical Natural Gas Annual; Natural Gas Monthly; and Natural Gas Database.*

Figure 4.5

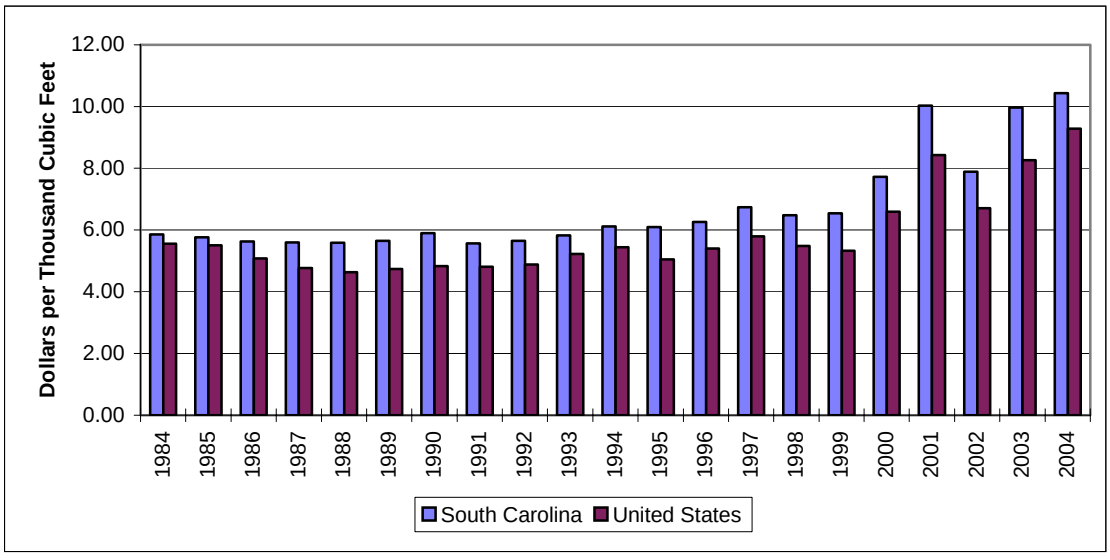
South Carolina and U.S. Average Price Comparison of Natural Gas Deliveries to Residential Sector Consumers, 1984-2004



Source: Energy Information Administration, *Natural Gas Monthly; Natural Gas Database.*

Figure 4.6

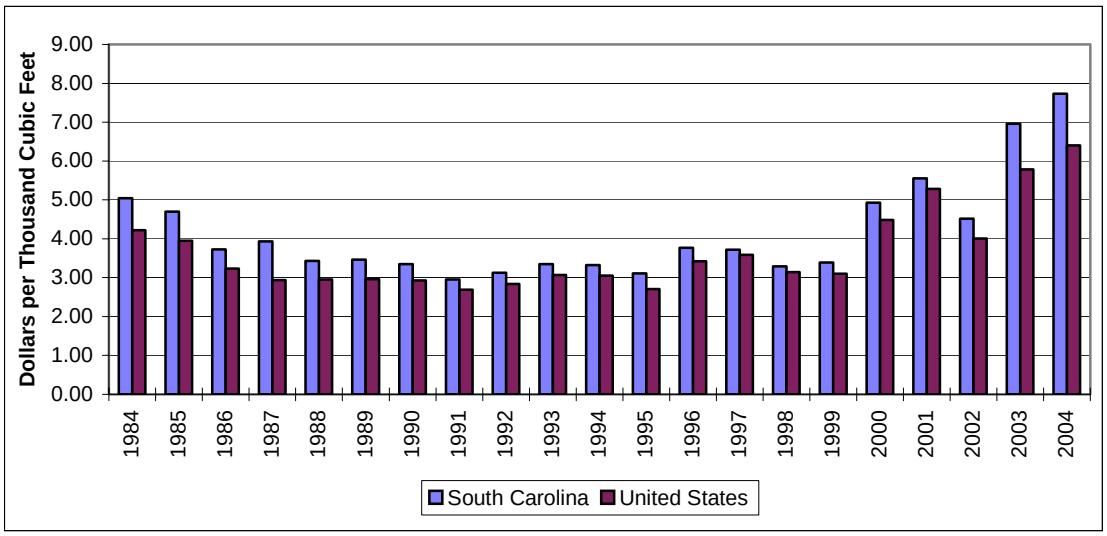
South Carolina and U.S. Average Price Comparison of Natural Gas Deliveries to Commercial Sector Consumers, 1984-2004



Source: Energy Information Administration, *Natural Gas Monthly; Natural Gas Database.*

Figure 4.7

South Carolina and U.S. Average Price Comparison of Natural Gas Deliveries to Industrial Sector Consumers, 1984-2004



Source: Energy Information Administration, *Natural Gas Monthly; Natural Gas Database.*

Quantity and Heating Value of Natural Gas Delivered to South Carolina Consumers

The amount (million cubic feet) of natural gas delivered to residential consumers in South Carolina increased by 57.4% from 1982 to 2002, while the number of consumers increased by 90.5%. In the commercial sector, the amount of natural gas delivered rose by 35.1%, and the number of commercial customers increased by 98.6%. The industrial sector experienced an 60.8% increase in the amount of natural gas delivered, and had an increase of 65% in the number of consumers. The amount of natural gas delivered to electric utilities fluctuates wildly so it is difficult to provide an accurate percentage amount. Overall, the amount of natural gas delivered to all sectors in South Carolina increased by 93.7% during this same period.

Table 4.7

Natural Gas Delivered to South Carolina Consumers with Quantity and Heating Value 1980-2002

Year	Residential		Commercial		Industrial		Electric Utilities	Total Quantity Delivered to Consumers (mcf)	Heating Value (Btu per cubic foot)
	Quantity (mcf)	Consumers	Quantity (mcf)	Consumers	Quantity (mcf)	Consumers	Quantity (mcf)		
1980	18,866	263,000	22,885	27,000	92,046	1,000	5,417	139,214	1,033
1982	17,548	267,000	15,560	28,000	61,595	1,000	517	95,220	1,030
1983	18,741	287,000	16,548	32,000	62,767	1,000	942	98,998	1,027
1984	19,246	291,000	16,635	32,000	69,526	1,000	435	105,842	1,026
1985	16,434	293,000	15,270	33,000	63,038	1,000	483	95,225	1,028
1986	17,440	298,000	15,894	34,000	61,455	1,000	1,386	96,175	1,030
1987	20,200	302,321	17,195	35,414	65,340	1,256	538	103,273	1,028
1988	20,790	313,831	17,472	37,075	69,177	1,273	2,378	109,817	1,027
1989	20,472	327,527	16,525	38,856	74,534	1,307	2,705	114,236	1,026
1990	18,396	339,486	15,394	39,904	86,831	1,384	6,975	127,596	1,028
1991	19,612	344,763	15,796	39,999	85,790	1,400	9,823	131,021	1,027
1992	22,392	357,818	16,644	40,968	94,327	1,568	1,795	135,158	1,027
1993	24,345	370,411	17,014	42,191	95,557	1,625	1,851	138,767	1,029
1994	23,486	416,773	17,870	45,487	97,500	1,928	3,005	141,861	1,031
1995	25,164	412,259	18,868	47,293	98,332	1,802	6,615	148,979	1,027
1996	29,406	426,088	20,328	48,650	95,493	1,759	1,206	146,433	1,030
1997	25,741	443,093	19,560	50,817	102,929	1,764	273	148,503	1,031
1998	25,430	460,141	19,828	52,237	102,324	1,728	5,893	153,476	1,034
1999	25,669	473,799	20,566	53,436	102,681	1,769	5,118	154,036	1,031
2000	29,057	489,340	22,105	54,794	97,682	1,718	2,814	151,660	1,029
2001	27,485	501,161	20,743	55,257	79,674	1,702	10,944	138,864	1,038
2002	27,621	508,686	21,029	55,608	99,042	1,650	36,710	184,422	1,033

Source: Energy Information Administration, *Natural Gas Annual*.

SECTION 5: COAL

South Carolina Annual Coal Consumption by Sector

Annual coal consumption in the residential and commercial sectors in South Carolina remains nonexistent, as indicated below in Table 5.1. From 1983 to 2003, the industrial sector decreased its consumption of coal by 9.9%, while electric utilities increased their consumption of coal by 111.7%. Overall, coal consumption in South Carolina increased by 79.3% from 1983 to 2003. In 2003, electric utilities accounted for 88% of all coal consumed in South Carolina with a price of $40.91 per short ton, while the industrial sector accounted for the remaining 12%, with a price of $48.95 per short ton. Also, the top ten manufacturers in the U.S. that use coal as a fuel source, include five plants in South Carolina: E.I. DuPont DE Nemours and Co., Eastman Chemical Co., International Paper Co., Lafarge North America, and Mead Westvaco Corp.

Table 5.1

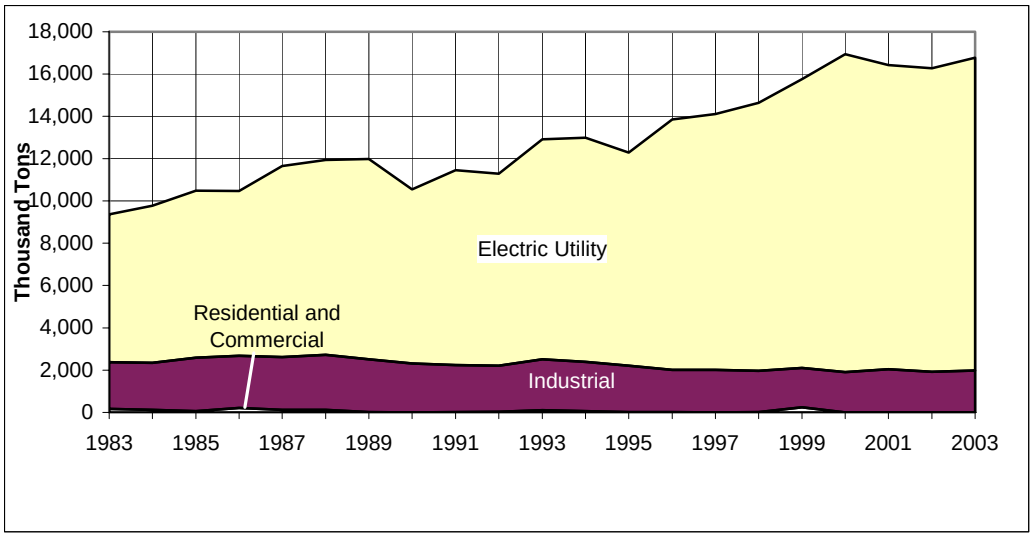
South Carolina Annual Coal Consumption by Sector, 1983-2003
(Thousand Tons)

Year	Residential and Commercial	Industrial	Electric Utility	TOTAL	Percent Change
1983	172	2,200	6,989	9,361	-14.8%
1984	115	2,226	7,428	9,769	4.4%
1985	66	2,525	7,888	10,479	7.3%
1986	219	2,465	7,777	10,461	-0.2%
1987	120	2,502	9,019	11,641	11.3%
1988	126	2,602	9,210	11,938	2.6%
1989	17	2,491	9,472	11,980	0.4%
1990	6	2,310	8,228	10,544	-12.0%
1991	22	2,212	9,218	11,452	8.6%
1992	31	2,177	9,078	11,286	-1.4%
1993	109	2,395	10,410	12,914	14.4%
1994	61	2,334	10,597	12,992	0.6%
1995	17	2,188	10,074	12,279	-5.5%
1996	19	2,000	11,833	13,852	12.8%
1997	1	2,014	12,096	14,111	1.9%
1998	23	1,962	12,664	14,649	3.8%
1999	237	1,863	13,666	15,766	7.6%
2000	N/A	1,912	15,034	16,946	7.5%
2001	N/A	2,038	14,382	16,420	-3.1%
2002	N/A	1,923	14,347	16,270	-0.9%
2003	N/A	1,983	14,798	16,781	3.1%

Source: Energy Information Administration, 1977-1991, *State Energy Data Report*; 1992-1999, *Coal Industry Annual*.

Figure 5.1

South Carolina Annual Coal Consumption by Sector, 1983-2003



Source: Energy Information Administration, *State Energy Data Report* and *Coal Industry Annual*.

Receipts and Delivered Cost of Coal by South Carolina Electric Utility and Plant

As indicated in Table 5.2 below, coal receipts at South Carolina electric utilities increased by 2,528 thousand short tons from 1999 to 2001 (19.6%). At the same time, the average delivered cost of coal to these utilities decreased by $3.19 per short ton. The Winyah and Cross plants, both operated by Santee Cooper (South Carolina Public Service Authority), accounted for the most coal receipts of all South Carolina electric plants, numbering 3,440 and 3,282 respectively (in thousand short tons) in 2001.

Table 5.2

Receipts and Average Delivered Cost of Coal by South Carolina Electric Utilities and Plants, 1999-2001

Electric Utility and Plant	1999		2000		2001	
	Receipts (Thousand Short Tons)	Cost per Short Ton	Receipts (Thousand Short Tons)	Cost per Short Ton	Receipts (Thousand Short Tons)	Cost per Short Ton
Carolina Power & Light Co.*						
Robinson	364	37.78	266	40.05	262	43.55
Duke Power Co.**						
Lee	409	35.85	505	34.79	572	43.77
SC Electric & Gas Co.						
Canadys	439	38.06	845	37.59	997	40.40
Cope	1,034	36.38	974	36.28	1,003	36.04
McMeekin	686	38.88	659	36.39	631	38.70
Urquhart	622	40.17	506	39.20	639	40.14
Wateree	1,707	37.06	1,651	37.07	1,857	39.54
Williams	1,590	38.69	1,647	37.10	1,568	39.46
Santee Cooper						
Cross	2,686	34.19	3,037	33.97	3,282	39.22
Grainger	299	38.87	370	38.75	422	42.33
Jefferies	698	34.62	725	33.45	732	41.76
Winyah	2,343	34.33	3,097	32.93	3,440	38.24
TOTAL	**12,877**	**37.07**	**14,282**	**36.46**	**15,405**	**40.26**

Carolina Power & Light Company is now a subsidiary of Progress Energy.
**Duke Power Company is now a subsidiary of Duke Energy.
Source: Energy Information Administration, *Cost and Quality of Fuels for Electric Plants*.

South Carolina Price and Expenditure Estimates for Coal by Sector

The industrial sector saw an increase of 0.18 nominal dollars per million Btu between 1980 and 2001. The electric utilities sector had a slight increase of 0.01 nominal dollars per million Btu. Overall, there was a decrease of 0.43 nominal dollars per million Btu during this period. The coal expenditure estimates in the industrial sector increased by 33.2%, and, 84.4% in the electric utilities sector. Collectively, coal expenditures in South Carolina increased by 69.6% during this same period.

Table 5.3

South Carolina Price and Expenditure Estimates for Coal by Sector, 1980-2001
(Price in Nominal Dollars per Million Btu; Expenditures in Million Nominal Dollars)

	Residential		Commercial		Industrial		Electric Utilities		Totals	
Year	Prices	Expend.	Prices	Expend.	Prices	Expend.	Prices	Expend.	Prices	Expend.
1980	3.19	5.4	1.70	5.3	1.70	74.9	1.56	306.6	2.04	392.2
1981	3.88	3.4	1.88	3.1	1.88	94.8	1.80	384.6	2.36	485.9
1982	3.69	3.7	1.99	3.7	1.99	111.7	1.91	405.4	2.40	524.5
1983	3.67	5.5	1.86	5.2	1.86	101.3	1.96	343.3	2.34	455.3
1984	3.68	3.7	1.88	3.5	1.88	103.7	1.97	365.9	2.35	476.8
1985	3.48	2.0	1.77	1.9	1.77	111.3	1.91	378.4	2.23	493.6
1986	3.31	6.3	1.77	6.3	1.77	108.6	1.83	359.5	2.17	480.7
1987	3.20	3.4	1.70	3.3	1.70	109.3	1.74	397.0	2.09	513.0
1988	3.26	3.6	1.67	3.4	1.67	108.9	1.76	410.9	2.09	526.8
1989	3.34	0.5	1.69	0.5	1.69	105.1	1.71	408.0	2.11	514.1
1990	3.34	0.2	1.74	0.2	1.74	101.2	1.72	397.5	2.14	499.1
1991	3.15	0.6	1.71	0.6	1.71	95.5	1.63	381.4	2.05	478.1
1992	3.11	0.8	1.72	0.9	1.72	94.2	1.53	355.3	2.02	451.2
1993	3.26	3.3	1.72	2.9	1.72	103.8	1.57	418.2	2.07	528.2
1994	3.23	1.9	1.75	1.7	1.75	102.3	1.56	422.3	2.07	528.2
1995	3.10	0.5	1.71	0.4	1.71	94.5	1.51	391.5	2.01	486.9
1996	3.06	0.5	1.76	0.5	1.76	88.2	1.47	444.1	1.51	533.3
1997	3.12	*	1.76	*	1.76	89.1	1.45	450.0	1.49	539.1
1998	3.15	0.6	1.76	0.6	1.76	86.3	1.45	469.3	1.49	556.9
1999	3.05	6.2	1.76	6.7	1.76	82.2	1.42	495.7	1.47	590.9
2000	N/A	N/A	N/A	N/A	1.64	82.4	1.39	530.9	1.42	613.3
2001	N/A	N/A	N/A	N/A	1.88	99.8	1.57	565.5	1.61	665.3

Source: Energy Information Administration, *State Energy Price and Expenditure Data*.

SECTION 6: NUCLEAR

Nuclear Power Plants in South Carolina

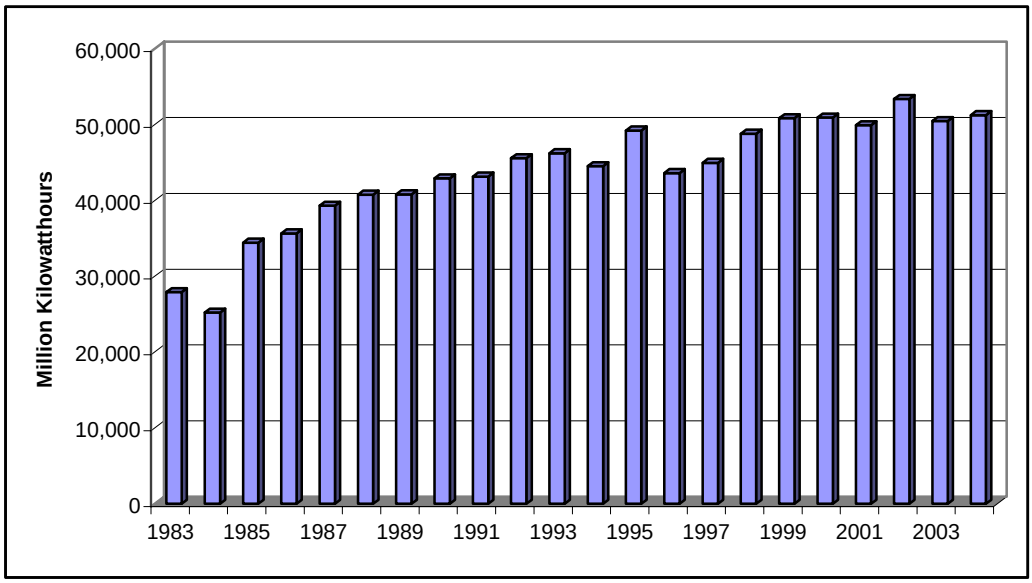
With seven reactors, South Carolina is the third largest generator of nuclear electricity in the U.S. The two light-water reactors at the Catawba Nuclear Station are the largest in the state (although, with three reactors, the Oconee plant has the most nuclear capacity in the southeastern United States). The Catawba plant leads the nation in generating efficiency, according to the Federal Energy Regulatory Commission (FERC). Catawba's operations and maintenance costs were surveyed by the trade publication Platt's *Nucleonics Week*. Based on documentation filed with FERC, the costs were $11.33 per megawatt hour, the lowest in the country.

South Carolina Nuclear Plants Highlights

- Of the 31 States with nuclear capacity, South Carolina ranks 3rd in total nuclear production, after Illinois and Pennsylvania.
- Of the 31 states with nuclear capacity, South Carolina is tied for 2nd place (53%) with Connecticut, New Hampshire, and New Jersey in percentage of electricity generated by nuclear energy. Vermont is ranked first with 73 percent.
- South Carolina is the largest producer of nuclear power in the southeastern United States. The Oconee nuclear power plant ranks 16th in capacity on the Energy Information Administration's list of 100 largest power plants. Catawba ranks 36th in capacity.
- In May 2000, the Oconee nuclear plant became the second power plant in U.S. history to be awarded license extensions by the U.S. Nuclear Regulatory Commission.
- Of nine southeastern states that have nuclear power, South Carolina is the only one in which nuclear power is the leading fuel in the electricity market. In Alabama, Arkansas, Georgia, North Carolina, and Tennessee, coal has the largest share. In Louisiana and Mississippi, natural gas is the leader. In Florida, the lead is divided nearly equally between gas (32% of generation) and coal (30% of generation).
- According to the Nuclear Energy Institute, *"Nuclear energy in South Carolina emits no harmful gases into the environment, avoiding emissions that would have been produced by other energy sources used for baseload electricity generation. During 2003, South Carolina's nuclear power plants avoided approximately 241,080 tons of sulfur dioxide emissions, 95,940 tons of nitrogen oxide emissions, and 46.83 million metric tons of carbon dioxide emissions. Avoiding these additional emissions is particularly important to areas that are experiencing air quality problems due to traffic and industry."*

Figure 6.1.

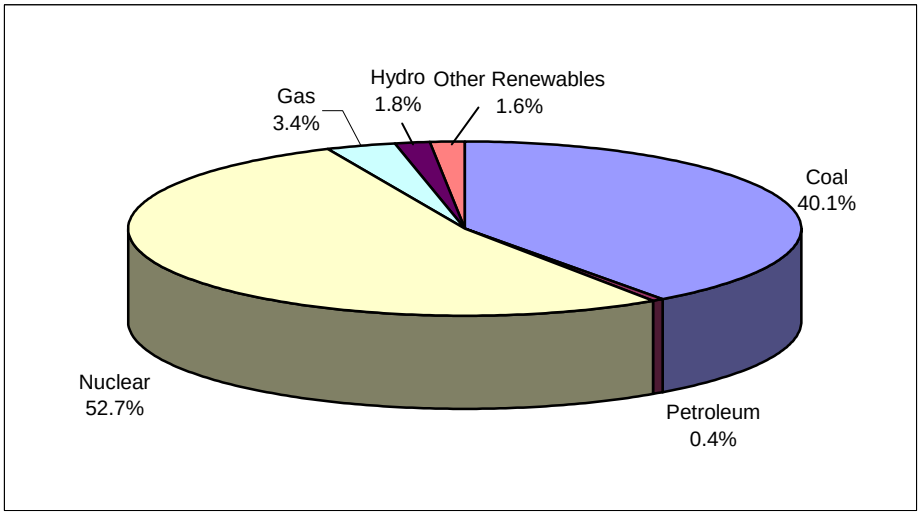
Nuclear Generation in South Carolina, 1984-2004



Source: Energy Information Administration, *Electric Power Monthly and* EIA Survey Form 906; U.S. Nuclear Regulatory Commission.

Figure 6.2

Nuclear as Percentage of Total Electricity Generation in South Carolina, 2004



Source: Energy Information Administration, *Electric Power Monthly*.

Table 6.1. Compendium of Nuclear Plants in South Carolina

Catawba

The Catawba Nuclear Station is a single unit located in North-Central South Carolina, 6 miles north of Rock Hill and 19 miles southwest of Charlotte. It is sited on a 391-acre peninsula bounded by Beaver Dam Creek, Big Allison Creek and Lake Wylie. The two units account for 35% of South Carolina's nuclear generation total.

Unit 1

Operator:	Duke Power Company (subsidiary of Duke Energy)
Owners:	North Carolina Electric Membership Corp. (56.3%), Duke Power (25%), Saluda River Electric Cooperative (18.8%)
Reactor Supplier:	Westinghouse Corporation
Capacity:	1129 net MWe
Reactor Type:	Pressurized water reactor

Date of Operation:	January 1985
License Expiration Date:	12/06/2024
Electricity Generated in 2003:	8.17 billion kWh
2003 Capacity Factor:	82.5%

Unit 2

Operator:	Duke Power Company (subsidiary of Duke Energy)
Owners:	North Carolina Eastern Municipal Power Agency (75%), Piedmont Municipal Power Agency (25%)
Reactor Supplier:	Westinghouse Corporation
Capacity:	1129 net MWe
Reactor Type:	Pressurized water reactor

Date of Operation:	May 1986
License Expiration Date:	02/24/2026
Electricity Generated in 2003:	9.31 billion kWh
2003 Capacity Factor:	94%

H.B. Robinson

The H.B. Robinson Plant is sited on over 5000 acres near Hartsville, and 56 miles east of Columbia, South Carolina. The site includes Lake Robinson, its source of cooling water and a coal-fired unit, H.B. Robinson 1. Unit 2 provides for 13% of South Carolina's total nuclear generation.

Operator:	Carolina Power & Light Co. (subsidiary of Progress Energy)
Owner:	Progress Energy (100%)
Reactor Supplier:	Westinghouse Corporation
Capacity:	714 net MWe

Reactor Type:	Pressurized water reactor
Date of Operation:	September 1970
License Expiration Date:	07/31/2010
Electricity Generated in 2003:	6.43 billion kWh
2003 Average Capacity Factor:	103.3%

Oconee

The Oconee Nuclear Station is located on the shore of Lake Keowee, approximately 26 miles west of Greenville, South Carolina. Unit 2 accounts for 38% of South Carolina's total nuclear generation.

Unit 1

Operator:	Duke Power Co.
Owner:	Duke Energy Corp. (100.0%)
Reactor Supplier:	Babcock and Wilcox
Capacity:	846 net MWe
Reactor Type:	Pressurized water reactor
Date of Operation:	February 1973
License Expiration Date:	02/06/2013
Electricity Generated in 2003:	5.24 billion kWh
2003 Capacity Factor:	70.6%

Unit 2

Operator:	Duke Power Co.
Owner:	Duke Energy Corp. (100.0%)
Reactor Supplier:	Babcock and Wilcox
Capacity:	846 net MWe
Reactor Type:	Pressurized water reactor
Date of Operation:	October 1973
License Expiration Date:	10/06/2013
Electricity Generated in 2003:	7.56 billion kWh
2003 Capacity Factor:	101.8%

Unit 3

Operator:	Duke Power Co.
Owner:	Duke Energy Corp. (100.0%)
Reactor Supplier:	Babcock and Wilcox
Capacity:	846 net MWe
Reactor Type:	Pressurized water reactor
Date of Operation:	July 1974
License Expiration Date:	07/19/2014
Electricity Generated in 2003:	6.31 billion kWh
2003 Average Capacity Factor:	85%

Virgil C. Summer

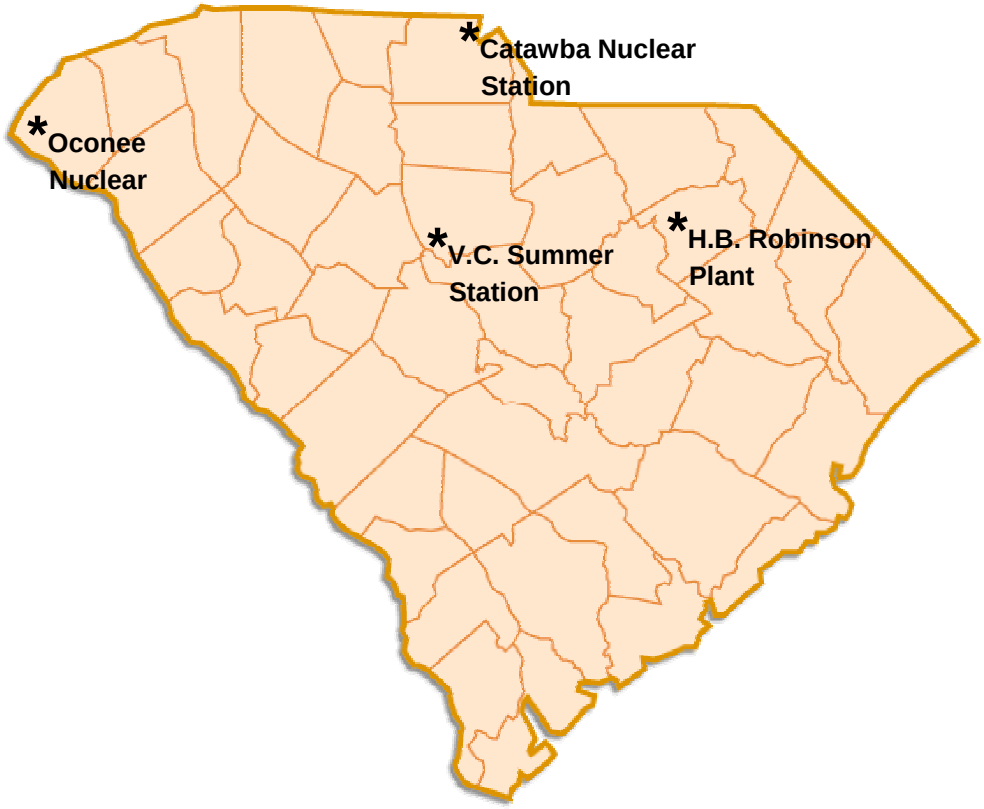
The Virgil C. Summer nuclear station occupies a site in Fairfield County near Jenkinsville, South Carolina, about 26 miles southwest of Columbia. The site includes the decommissioned experimental CVTR unit. Water from the Monticello reservoir provides cooling water and feeds a pumped storage unit. The Summer station provides 15% of the total nuclear generation in South Carolina.

Operator:	South Carolina Electric & Gas Co.
Owners:	South Carolina Electric & Gas Co. (66.7%), South Carolina Public Service Authority (33.3%)
Reactor Supplier:	Westinghouse Corporation
Capacity:	952 net MWe
Reactor Type:	Pressurized water reactor

Date of Operation:	November 1982
License Expiration Date:	08/06/2022
Electricity Produced in 2003:	7.35 billion kWh
2003 Average Capacity Factor:	84.9%

Figure 6.3

Location of Nuclear Power Plants in South Carolina



Source: South Carolina Energy Office

Radioactive Waste Disposal Program

The Barnwell low-level radioactive waste disposal site was one of six disposal sites developed in the 1960s and 1970s for commercially-generated low-level radioactive waste, most of which is generated by nuclear power plants. The site was originally intended to serve the southeast region of the nation, but closure of the other disposal sites left Barnwell as the only site east of the Mississippi River. State law enacted in 2000 decreases the volume of waste that can be accepted at the Barnwell site each year through June 30, 2008. After that date, the Barnwell facility can only accept waste from the three-state Atlantic Compact region, which includes South Carolina, New Jersey, and Connecticut.

There are two other disposal facilities operating today. A disposal site in Richland, Washington, accepts only waste generated within the 11-state Northwest and Rocky Mountain compact regions. A relatively new disposal facility in Utah accepts waste from across the nation, but can only receive wastes classified as "Class A." These wastes are relatively low in radioactivity and high in v higher activity "low-level" waste, classified as "Class B" and "Class C the nation accepting Class B and Class C radioactive waste from the having access to the Richland site.

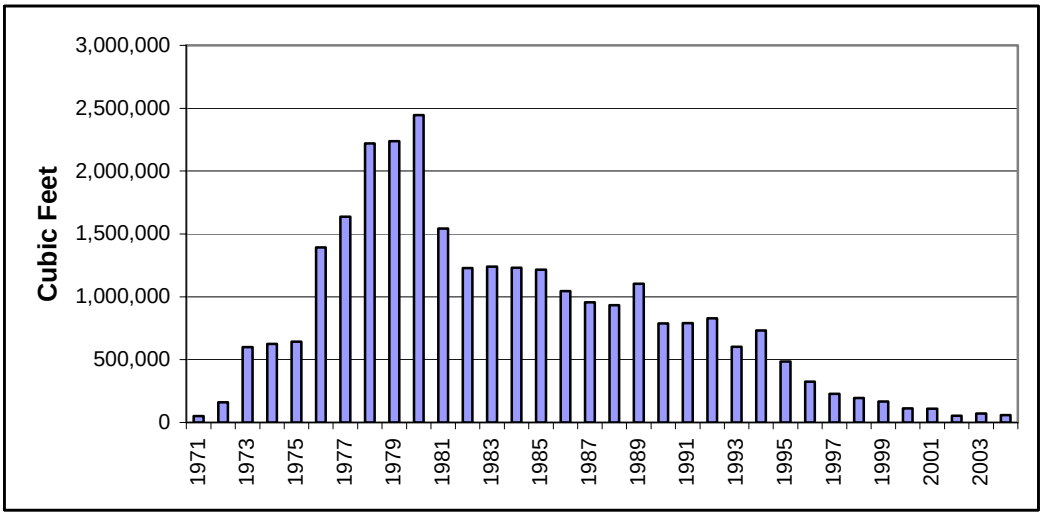
None of the three disposal sites accept spent fuel from nuclear power reactors or high-level waste from nuclear weapons activities of the federal government. The federal government is conducting tests on a deep geologic repository at Yucca Mountain, Nevada, as a possible disposal site for

this kind of waste. Until such a repository is developed, spent fuel and high level waste will remain in temporary storage at existing nuclear power plant sites and federal installations.

The Radioactive Waste Disposal Program (RWDP) within the South Carolina Energy Office continues to reduce the volume of radioactive waste accepted at the Barnwell, South Carolina site in accordance with South Carolina state law, while maximizing the dollars received for each shipment of waste. Money received for radioactive waste disposal at the state-owned Barnwell facility is earmarked for higher education scholarships, school construction, Barnwell County needs, and for rebates to South Carolina companies that use the disposal site. In 2004, the volume of waste received was reduced to 59,515 cubic feet (a decrease of 88.4% from a decade ago), as a result of the legally-mandated volume cap. Nevertheless, as volumes have decreased, the Energy Office has been successful in achieving higher revenues per cubic foot of space utilized, thus mitigating the financial effect of lower disposal volumes. Figure 6.4 shows the amount of radioactive waste received at the Barnwell County site from all sources from 1971 to 2004, Figure 6.5 gives a percentage account of the radioactive waste received at Barnwell from the entire nation, and Figure 6.6 provides a percentage account of the radioactive waste received only from within South Carolina.

Figure 6.4.

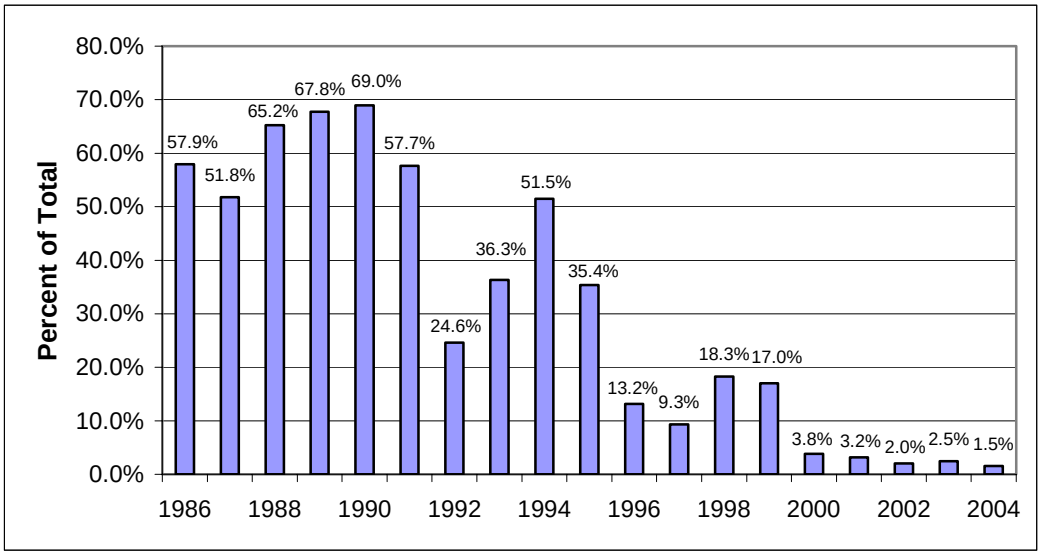
Volume of Radioactive Waste Received at Barnwell County Site, 1971-2004



Source: South Carolina Radioactive Waste Disposal Program.

Figure 6.5

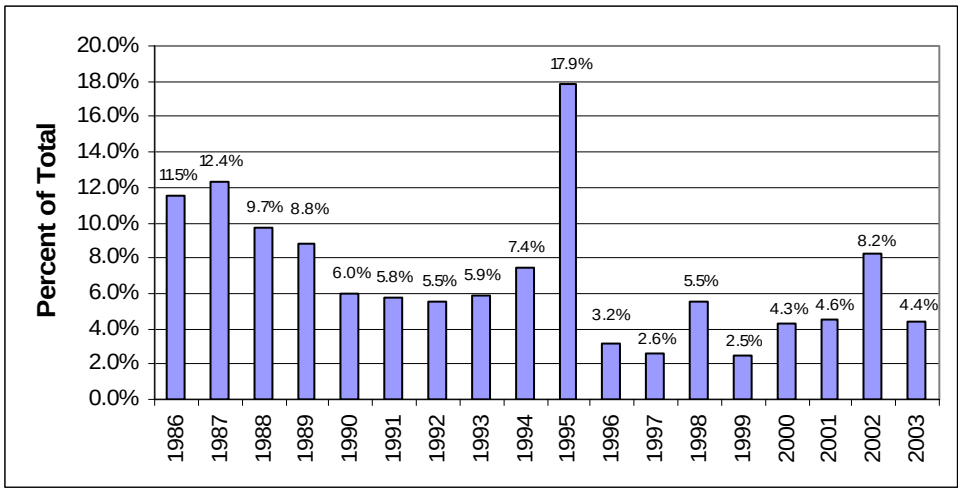
Nationwide Percentage of Radioactive Waste Going to Barnwell County Site, 1986-2004



Source: South Carolina Radioactive Waste Disposal Program.

Figure 6.6

Percent of Radioactive Waste Going to Barnwell County Site that is from South Carolina, 1986-2003



Source: South Carolina Radioactive Waste Disposal Program.

Savannah River Site (SRS)

Another radioactive waste site in South Carolina is the Savannah River Site (SRS), which was developed by the U.S. Department of Energy. Though not an energy production site, the SRS has played a major role in South Carolina and the U.S. for its nuclear weapons program. Key points pertaining to the SRS are highlighted below.

Background

- The Savannah River Site (SRS), a key U.S. Department of Energy complex, occupies approximately 310 square miles of land adjacent to the Savannah River, principally in Aiken and Barnwell counties of western South Carolina.

- SRS was constructed during the early 1950s to produce the basic materials used in the fabrication of nuclear weapons, primarily tritium and plutonium-239, in support of our nation's defense programs. Five reactors were built on the site. The reactors produced nuclear products by irradiating materials with neutrons. Also built were support facilities including two chemical separations plants, a water extraction plant, a nuclear fuel and target fabrication facility and waste management facilities. The production process began with the manufacture of fuel and target assemblies produced from a variety of nuclear and other materials such as enriched uranium and aluminum. The assemblies were transported to the reactors where they were loaded into the reactors' cores and used to produce a series of controlled nuclear reactions. During the reaction, neutrons from the fuel bombarded the target assemblies to produce the desired products. The irradiated target assemblies and spent fuel assemblies then were moved to one of the chemical separations facilities—known as "canyons"—where the desired products were separated and waste products were processed. After refinement, nuclear materials were shipped to

other DOE sites for incorporation into nuclear weapons. SRS produced about 36 metric tons of plutonium from 1953 to 1988.

- As a result of the end of the Cold War, the site's five reactors were all shut down in 1988. However, recycling and reloading of tritium to maintain the nation's supply of nuclear weapons is a continuing SRS mission, as well as providing environmental cleanup, remediation and economic development. Since 1989, SRS has been operated and managed by Westinghouse Savannah River Company (WSRC)

- In the mid-1980s, construction commenced on a major facility that would immobilize high-level radioactive waste and convert it into a durable glass form through a process called vitrification. The Defense Waste Processing Facility (DWPF) would become the world's largest system for stabilizing radioactive waste in glass. The DWPF is a marvel of nuclear construction, built to withstand any type of natural disaster and provide an absolutely safe environment for those who work inside employing the vitrification process that stabilizes the high-level nuclear waste. The high-level waste from the SRS will remain highly radioactive for hundreds of years; it generates a great deal of heat and requires heavy shielding to control the radiation.

- The site serves as a storage graveyard for nuclear fuels provided to foreign researchers and then returned to this country under the Atoms for Peace program, which was designed to discourage nuclear proliferation. The fuels will require close maintenance for hundreds, if not thousands, of years.

Contamination

- The SRS site is characterized as one of the most contaminated tracts of land and water anywhere. Cleanup of the 310-square-mile site is one of the largest environmental undertakings in history—the legacy of more than 40 years of production of plutonium and tritium for national defense. The SRS's critical role in support of the national defense involves maintaining a stockpile of tritium, a component in nuclear weapons that presently is not being produced in the U.S.

- Some 460 waste sites measure anywhere from a few square feet to several acres. Weapons production produced 34 million gallons of highly radioactive waste now contained in on-site tanks. Additional poisons are stored in a maze of burial grounds, pits, piles, basins, landfills and contaminated groundwater areas.

- Currently, about 90 acres have been cleaned, along with several billion gallons of groundwater from which hundreds of thousands of pounds of solvents have been removed.

New Missions

- SRS has been designated to continue as DOE's center for the supply of tritium to the enduring nuclear weapons stockpile. DOE has announced that its primary new source of tritium will be existing commercial reactors in the Tennessee Valley Authority system. A new facility is now under construction at SRS to extract the tritium from rods irradiated in

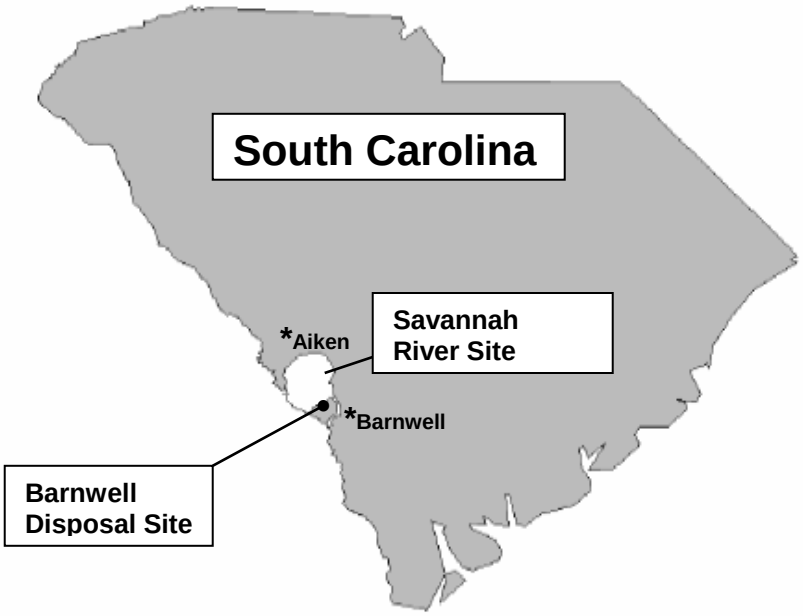
TVA's reactors and load it into containers for shipment to the Department of Defense. This new Tritium Extraction Facility is expected to begin normal operations in fiscal year 2007.

- Plutonium and nuclear material management missions now being conducted at SRS will be expanded to include materials from dismantled weapons and surpluses from other DOE sites. This new mission will be focused on the disposition of excess weapons-grade material consistent with the U.S. – Russian agreement on nonproliferation. DOE has chosen SRS to be the location for the Department's plutonium pit disassembly and conversion and mixed oxide fuel fabrication facilities. These missions, which convert excess weapons-usable plutonium to a form that can be used in commercial power reactors, establish SRS's vital role in plutonium management for DOE.

- The Center for Hydrogen Research, a unique 60,000 square foot facility dedicated to hydrogen technology research, development and commercialization and located on the Savannah River Research Campus, brings together scientists, industries and universities to develop hydrogen fuel technology to its full potential. Due to its background in the production, handling and storage of hydrogen, the Savannah River National Laboratory is uniquely qualified to lead the nation in the development of hydrogen storage for stationary and automotive purposes.

Figure 6.7

Map of the Savannah River Site (SRS) and Barnwell Disposal Site



Source: South Carolina Energy Office.

SECTION 7: RENEWABLE ENERGY

Renewable Electric Power Generation by Fuel Source

Conventional hydroelectric generation fell by 57.9% between 1990 and 2002, due to drought conditions from 1999 through 2002. Generation by wood waste solids fuels was a most consistent form of renewable energy generation between 1990 and 2002, but it decreased 7% during this period. Renewable energy as a percentage of total state electric power generation has declined from 6.7% in 1990 to 2.7% in 2002.

Table 7.1

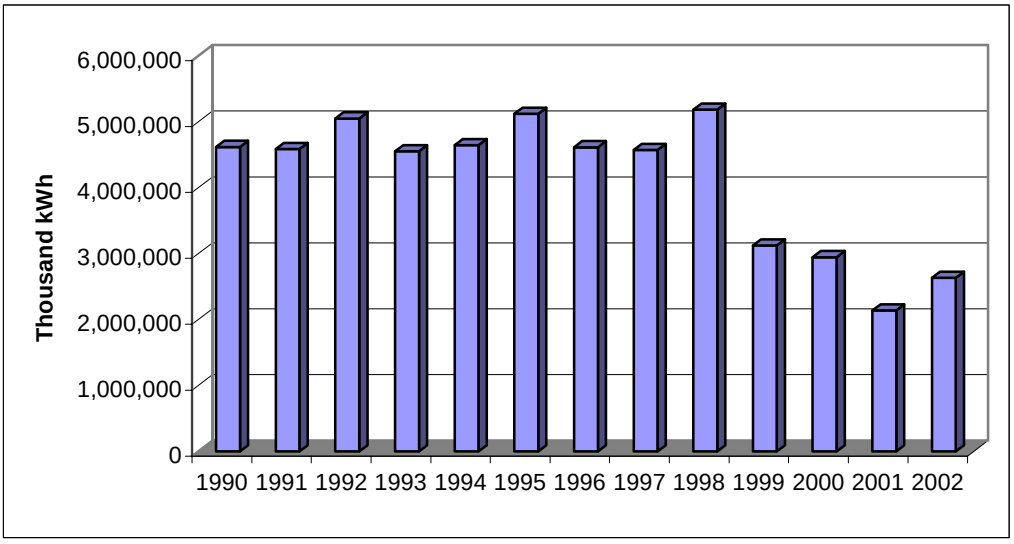
Total Renewable Net Power Generation by Source in South Carolina, 1990-2002
(Thousand Kilowatthours)

Year	Hydroelectric Conventional	MSW/Land-fill Gas	Wood/Wood Waste	Other Biomass*	Totals	Total State Generation	Percent Renewable
1990	3,298,700	N/A	1,321,764	N/A	4,620,464	69,255,000	6.7%
1991	3,136,505	N/A	1,451,793	N/A	4,588,298	69,832,000	6.6%
1992	3,311,102	N/A	1,739,965	N/A	5,051,067	71,475,000	7.1%
1993	2,950,745	N/A	1,602,209	N/A	4,552,954	75,580,000	6.0%
1994	3,038,238	N/A	1,609,169	N/A	4,647,407	74,194,000	6.3%
1995	3,457,798	N/A	1,662,833	N/A	5,120,631	78,442,000	6.5%
1996	3,041,618	N/A	1,573,995	N/A	4,615,613	76,327,000	6.0%
1997	2,958,723	N/A	1,615,098	N/A	4,573,821	78,403,000	5.8%
1998	3,569,416	57,349	1,553,940	4,983	5,185,688	84,359,000	6.1%
1999	1,687,351	60,577	1,376,131	N/A	3,124,059	90,233,508	3.5%
2000	1,533,490	62,534	1,351,052	6,147	2,947,076	93,346,240	3.2%
2001	1,225,443	49,202	866,107	537	2,140,752	89,158,988	2.4%
2002	1,389,751	15,222	1,228,895	N/A	2,633,868	96,563,498	2.7%

*Agriculture byproducts/crops, sludge waste, tires and other biomass solids, liquids and gases.
Source: Energy Information Administration, *Renewable Energy Annual*.

Figure 7.1

Total Renewable Net Power Generation in South Carolina, 1990-2002



Source: Energy Information Administration, *Renewable Energy Annual*.

Solar Water Heating and PV (Photovoltaic) Systems in South Carolina

Although not reflected in the data from the Energy Information Administration with the U.S. Department of Energy, the South Carolina Energy Office has developed its own solar/PV (photovoltaic) database. As of 2004, Table 7.2 indicates there are 106 operational solar energy systems, with 91 in the residential sector, 14 in the commercial sector, and 1 in the agriculture sector.

Table 7.2

Name City County	Type and Size (Btu Output or Wattage)	Purpose	Year in Operation	Sector Served
1. Williamsburg County Jail, Kingstree, SC Williamsburg Co.	10 4'x8' Collectors	Pre-heat 500 gallons of water for jail needs	1991	Commercial
2. Homeowner, Greenville, SC Greenville Co.	4-4'x16' Collectors	Swimming Pool Heating	2004	Residential
3. Farmer, Morrison, Six Mile, SC Pickens Co.	PV 320 Watt panel	Cattle water pumping System	2004	Residential
4. University of SC, Columbia, SC Richland Co.	Evacuated Tube Collectors	Pre-heat Water for West Quad Dorm	2004	Commercial
5. Homeowner, Greenville, SC Greenville Co.	2-4'x8' Collectors	Hot Water System	2004	Residential
6. Homeowner, Greenville, SC Greenville Co.	2-4'x8' Collectors	Hot Water System	2004	Residential
7. Homeowner, Spartanburg, SC Spartanburg Co.	4'x10' Collector	Hot Water System	2004	Residential
8. Homeowner, Greenville, SC Greenville Co.	9-4'x10' Collectors	Pool Heating System	2004	Residential
9. Homeowner, Greenville, SC Greenville Co.	2-4'x8' Collectors	Hot Water System	2004	Residential
10. Homeowner, Greenville, SC Greenville Co.	2-4'x8' Collectors	Hot Water System	2004	Residential
11. Homeowner, Columbia, SC Richland Co.	3-3'x7' Collectors	Hot Water System	2004	Residential
12. Homeowner, Simpsonville, SC Greenville Co.	2-4'x8' Collectors	Hot Water System	2004	Residential

13. Goodwill Industries, Greenville, SC Greenville Co.	PV 2 75-Watt	Stand Alone Remote	2004	Commercial

Name City County	Type and size (Btu Output or Wattage)	Purpose	Year in Operation	Sector Served
14. Homeowner, Greenville, SC Greenville Co.	3-3'x8' Collectors	Hot Water System	2004	Residential
15. Homeowner, Columbia, SC Richland Co.	4'x10' Collector	Hot Water System	2004	Residential
16. Homeowner, Greenville, SC Greenville Co.	2-4'x10' Collectors	Hot Water System	2003	Residential
17. Homeowner, Greer, SC Greenville Co.	PV 40-Watt System	Electric Gate Control	2003	Commercial
18. Homeowner, Mauldin, SC Greenville Co.	2-4'x8' Collectors	Hot Water System	2003	Residential
19. Homeowner, Chapin, SC Lexington Co.	4'x12' Collector	Hot Water System	2003	Residential
20. Homeowner, Cross, SC Berkeley Co.	2-4'x8' Collectors	Hot Water System	2003	Residential
21. Homeowner, Easley, SC Pickens Co.	6'x8' Air Collector	Space Heating System	2003	Residential
22. US Army Corps of Engineers, Jasper Co.	PV 1200 Watt System	Add-on to existing PV Valve Controllers	2003	Commercial
23. Homeowner, Easley, SC Pickens Co.	2 - 4'x8' collectors	Hot Water System supplement	Mid 80's, retrofitted in 2003	Residential
24. Homeowner, Travelers Rest, SC Greenville Co.	4-4'x10' Collectors	Pool Heating System	2003	Residential
25. Homeowner, Hopkins, SC Richland Co.	240 sq. ft. panel	Pool heating system	2003	Residential
26. Homeowner, Greenville, SC Greenville Co.	6'x8' Air Collector	Hot Water and Space Heating System	2003	Residential
27. Homeowner, Columbia, SC Richland Co.	6'x8' Collector	Batch Water Heating System	2003	Residential
28. Homeowner, Greenville, SC Greenville Co.	2-4'x8' Collectors	Hot Water System	2003	Residential

29. Homeowner, Greenville, SC Greenville Co.	2-4'x8' Collectors	Hot Water System	2003	Residential

Name City County	Type and size (Btu Output or Wattage)	Purpose	Year in Operation	Sector Served
30. Homeowner, Mauldin, SC Greenville Co.	2-4'x8' Collectors	Hot Water System	2003	Residential
31. Homeowner, Columbia, SC Richland Co.	200 sq. ft. Collector	Pool Heating System	2003	Residential
32. Joe Martin Farm, Central, SC Pickens Co.	PV 2 – 75-Watt System	Cattle Watering System	2002	Commercial
33. The Reserve at Keowee, SC Pickens Co.	PV 20 Watt System	Sprinkler System for Golf Course	2002	Commercial
34. The Reserve at Keowee, SC Pickens Co.	PV 75 Watt System	Golf course Rest Stop Light and Fan	2002	Commercial
35. Homeowner, Gadsden, SC Richland Co.	3-4'x8' Collectors	Hot Water System	2002	Residential
36. Homeowner, Sumter, SC Sumter Co.	4 - 4'x10' and 2 - 4'x8' Collectors	Pool Heating System and Hot Water System	2002	Residential
37. Homeowner, Manning, SC Clarendon Co.	5-4'x10' Collectors	Pool Heating System	2002	Residential
38. Homeowner, Seneca, SC Oconee Co.	2-4'x8' Collectors	Hot Water System	2002	Residential
39. Homeowner, Mt. Rest, SC Oconee Co.	PV 2820-Watt System	Well pump, Refrigerator & Freezer	2002	Residential
40. Homeowner, Salem, SC Greenville Co.	360 sq. ft. Collector	Pool Heating System	2002	Residential
41. Homeowner, Greenville, SC Greenville Co.	400 sq. ft. Collector	Pool Heating System	2002	Residential
42. Homeowner, Greenville, SC Greenville Co.	2-4'x8' Collectors	Hot Water System	2002	Residential
43. Homeowner, W. Columbia, SC Lexington Co.	180 sq. ft. Collector	Pool Heating System	2002	Residential
44. Homeowner, Greenville, SC Greenville Co.	600 sq. ft. panel	Pool heating system	2001	Residential

45. Homeowner, Seneca, SC Oconee Co.	440 sq. ft. Collector	Pool Heating System	2001	Residential

Name City County	Type and Size (Btu Output or Wattage)	Purpose	Year in Operation	Sector Served
46. Homeowner, Simpsonville, SC Greenville Co.	400 sq. ft. Collector	Pool Heating System	2001	Residential
47. Homeowner, Simpsonville, SC Greenville Co.	240 sq. ft. Collector	Pool Heating System	2001	Residential
48. Furman University, Greenville, SC Greenville Co.	PV 2,400 Watt System	Electricity Grid Tie to Eco-Cottage	2001	Commercial
49. Homeowner, Spartanburg, SC Spartanburg Co.	5 - 4' X 10' Collectors	Radiant Floor Heating System and Hot Water System	2001	Residential
50. Homeowner, Chesterfield, SC Chesterfield Co	PV 300-Watt System	Cattle Water Pumping System	2001	Agriculture
51. Homeowner, Columbia, SC Richland Co.	4'x'8' Collector	Hot Water System	2001	Residential
52. Homeowner, Columbia, SC Richland Co.	288 sq. ft. Collector	Pool Heating System	2001	Residential
53. Homeowner, Charleston, SC Charleston Co.	576 sq. ft. Collector	Pool Heating System	2001	Residential
54. Homeowner, Chapin, SC Lexington Co.	388 sq. ft. Collector	Pool Heating System	2001	Residential
55. Homeowner, Chapin, SC Lexington Co.	480 sq. ft. Collector	Pool Heating System	2001	Residential
56. Homeowner, Columbia, SC Richland Co.	288 sq. ft. Collector	Pool Heating System	2001	Residential
57. Homeowner, Columbia, SC Richland Co.	672 sq. ft. Collector	Pool Heating System	2001	Residential
58. Homeowner, James Island, SC Charleston Co.	336 sq. ft. Collector	Pool Heating System	2001	Residential
59. Homeowner, Columbia, SC Richland Co.	2-4'x6' Collectors	Batch Water Heating System	2001	Residential

60. Homeowner, Travelers Rest, SC Greenville Co.	2-4'x12' Collectors	Space Heater	2001	Residential
61. Homeowner, Moncks Corner, SC Berkeley Co.	480 sq. ft. Collector	Pool Heating System	2001	Residential

Name City County	Type and Size (Btu Output or Wattage)	Purpose	Year in Operation	Sector Served
62. Homeowner, Charleston, SC Charleston Co.	3 - 4'x8' Collectors	Hot Water System	2000	Residential
63. Homeowner, Anderson, SC Anderson Co.	400 sq. ft. Collector	Pool Heating System	2000	Residential
64. Homeowner, Gaffney, SC Cherokee Co.	8 - 4' x 14' Collectors	Radiant Floor Heating and Hot Water System	2000	Residential
65. Homeowner, Ladson, SC Berkeley Co.	432 sq. ft. Collector	Pool Heating System	2000	Residential
66. Homeowner, Goose Creek, SC Berkeley Co.	240 sq. ft. Collector	Pool Heating System	2000	Residential
67. Homeowner, Little River, SC Horry Co.	432 sq. ft. Collector	Pool Heating System	2000	Residential
68. Homeowner, Lancaster, SC Lancaster Co.	PV 1,700-Watt System	Supplemental Power	1999	Residential
69. Homeowner, Long Creek, SC Oconee Co.	PV 2,000-Watt System	Supplemental power	1999 - 2002	Residential
70. Homeowner, Long Creek, SC Oconee Co.	PV 2,000-Watt System	Supplemental power	1999 - 2002	Residential
71. Homeowner, Greenville, SC Greenville Co.	400 sq. ft. Collector	Pool Heating System	1999	Residential
72. Homeowner, Campobello, SC Spartanburg Co.	PV 500-Watt System	Supplemental Power	1999	Residential
73. Homeowner, Honea Path, SC Anderson Co.	PV 2,000-Watt System	Supplemental Power	1999	Residential
74. Homeowner, Fountain Inn, SC Greenville Co.	PV 2,400-Watt System and 3 - 4'x8' Collectors	Supplemental Power and Hot Water Heating System	1999	Residential

75. Homeowner, Greer, SC Greenville Co.	400 sq. ft. Collector	Pool Heating System	1998	Residential
76. Homeowner, Marietta, SC Greenville Co.	300 sq. ft. Collector	Pool Heating System	1998	Residential
77. Homeowner, Greer, SC Greenville Co.	PV 1,100-Watt System and 2 - 4'x8' Collectors	Supplemental Power Water Heating System	1998	Residential

Name City County	Type and Size (Btu Output or Wattage)	Purpose	Year in Operation	Sector Served
78. Homeowner, Simpsonville, SC Greenville Co.	PV 2,000-Watt Panel	Supplemental Power	1998	Residential
79. Homeowner, Greenville, SC Greenville Co.	440 sq. ft. Collector	Pool Heating System	1998	Residential
80. Homeowner, Pendleton, SC Greenville Co.	440 sq. ft. Collector	Pool Heating System	1998	Residential
81. Homeowner, Simpsonville, SC Greenville Co.	240 sq. ft. Collector	Pool Heating System	1998	Residential
82. SCDOT, Statewide	PV 77 - Eight panel 55-Watts System	Portable Road Sign	1997 - 2003	Commercial
83. SCDOT, Statewide	PV 30 - Four Panel 80-Watt System	Portable Highway Radio	1997 - 2003	Commercial
84. SCDOT, Statewide	PV 12 - Four Panel 80-Watt System	Traffic Cameras and Radar	1997 - 2003	Commercial
85. Homeowner, Easley, SC Pickens Co.	360 sq. ft. Collector	Pool Heating System	1997	Residential
86. Homeowner, Greenville, SC Greenville Co.	400 sq. ft. Collector	Pool Heating System	1997	Residential
87. Homeowner, Simpsonville, SC Greenville Co.	300 sq. ft. Collector	Pool Heating System	1997	Residential
88. Homeowner, Spring Valley, SC Richland Co.	4' x 8' Collector	Hot Water System	1996	Residential
89. Homeowner, Hilton Head Island, SC Beaufort Co.	Solar Roof Mat, 10 - 4' x 12' Collectors	Pool Heating System	1996	Residential
90. Homeowner, Walhalla, SC Oconee Co.	Solar Roof Mat, 10 - 4' x 12' Collectors	Pool Heating System	1996	Residential

91. Homeowner, Columbia, SC Richland Co.	4' X 10' Collector	Hot Water System	1992	Residential
92. SC Forestry Commission, Harbison State Forest, Columbia, SC Richland Co.	PV 16 – 75-Watt System	Power for Water Pump, Lights, and Fans	1992	Commercial

Name City County	Type and Size (Btu Output or Wattage)	Purpose	Year in Operation	Sector Served
93. Homeowner, Hilton Head Island, SC Beaufort Co.	6 - 4' x 8' Collectors	Pool Heating System	1990	Residential
94. Homeowner, Hilton Head Island, SC Beaufort Co.	2 - 4' x 8' collectors	Hot Water System	1990	Residential
95. Homeowner, Chapin, SC Lexington Co.	3' x 6' Collector	Hot Water System	Late 1980s	Residential
96. Homeowner, Sumter, SC Sumter Co.	4' x 8' Collector	Hot Water System	Late 1980s	Residential
97. Homeowner, Lake Wylie, SC York Co.	2-4'x10' Collectors	Hot Water System	1985-2003	Residential
98. Homeowner, Simpsonville, SC Greenville Co.	2-4'x10' Collectors	Hot Water System	1985	Residential
99. Homeowner, Greer, SC Greenville Co.	2-4'x8' Collectors	Hot Water System	1985	Residential
100. Homeowner, Lake Wylie, SC York Co.	2-4x8 Collectors	Hot Water System	1985-1999	Residential
101. Homeowner, Greenville, SC Greenville Co.	2-4'x8' Collectors	Hot Water System	1985	Residential
102. Homeowner, Greenville, SC Greenville Co.	2-4'x8' Collectors	Hot Water System	1985	Residential
103. Homeowner, Greer, SC Greenville Co.	2-4'x8' Collectors	Hot Water System	1985	Residential
104. Homeowner, Dentsville, SC Richland Co.	2 - 3' x 6' Collectors	Batch Water Heating System	Mid 1980s	Residential

105. Homeowner, Easley, SC Pickens Co.	4'X12' Collector	Hot Water System	1985	Residential
106. Furman University, Greenville, SC Greenville Co.	60-4'x10' Collectors	Pool and Hot Water System	1978-2004	Commercial

Source: South Carolina Energy Office Solar Database.

Facilities Using Water as a Renewable Energy Source in South Carolina

As shown in Table 7.3, there were 35 operational plants using water (hydro) as a renewable energy fuel source in South Carolina in 2003, with a generating capacity of 2,884,549 kW.

Table 7.3

Hydro-Electric Facilities Operating in South Carolina, 2003

Source	Owner	Fuel Type	Plant Name	Capacity (kW)
Hydro	DUKE POWER CO.	Water	99 ISLANDS	18,000.00
Hydro	CHI ENERGY, INC.	Water	APALACHEE	400
Hydro	DUKE POWER CO.	Water	BAD CREEK	1,065,000.00
Hydro	STS HYDROPOWER LTD.	Water	BOYDS MILL	1,600.00
Hydro	GREENWOOD	Water	BUZZARD'S ROOST	15,000.00
Hydro	DUKE POWER CO.	Water	CEDAR CREEK	45,000.00
Hydro	CLIFTON POWER CO.	Water	CLIFTON MILLS 1	800
Hydro	SOUTH CAROLINA ELECTRIC & GAS	Water	COLUMBIA	10,600.00
Hydro	CHI ENERGY, INC.	Water	CONEROSS CREEK	889
Hydro	DUKE POWER CO.	Water	DEARBORN	45,000.00
Hydro	DUKE POWER CO.	Water	GREAT FALLS	24,000.00
Hydro	STS HYDROPOWER LTD.	Water	HOLLIDAYS BRIDGE	4,000.00
Hydro	USCE-SAVANNAH DISTRICT	Water	J STROM THURMOND	280,000.00
Hydro	SANTEE COOPER	Water	JEFFERIES	132,600.00
Hydro	DUKE POWER CO.	Water	JOCASSEE	610,000.00
Hydro	DUKE POWER CO.	Water	KEOWEE	157,600.00

Hydro	LOCKHART POWER CO	Water	LOCKHART	12,300.00
Hydro	SOUTH CAROLINA ELECTRIC & GAS	Water	NEAL SHOALS	5,200.00
Hydro	MILLIKEN AND CO.	Water	PACOLET SC	800
Hydro	SOUTH CAROLINA ELECTRIC & GAS	Water	PARR	14,880.00
Hydro	CHI ENERGY, INC.	Water	PELZER MILLS LOWER	3,300.00
Hydro	CHI ENERGY, INC.	Water	PELZER MILLS UPPER	2,000.00
Hydro	SPARTANBURG, CITY OF	Water	R B SIMMS (SPARTANBURG WATER SYSTEM)	500
Hydro	INMAN MILLS	Water	RIVERDALE	1,240.00
Hydro	DUKE POWER CO.	Water	ROCKY CREEK	28,000.00
Hydro	ABBEVILLE, CITY OF	Water	ROCKY RIVER	2,600.00
Hydro	STS HYDROPOWER LTD.	Water	SALUDA (GREENVILLE)	2,400.00
Hydro	SOUTH CAROLINA ELECTRIC & GAS	Water	SALUDA (LEXINGTON)	197,500.00
Hydro	SANTEE COOPER	Water	SANTEE SPILLWAY	2,000.00
Hydro	SANTEE COOPER	Water	ST. STEPHENS	84,000.00
Hydro	DUKE POWER CO.	Water	WATEREE	56,000.00
Hydro	WHITNEY MILLS	Water	WHITNEY	200
Hydro	CHI ENERGY, INC.	Water	WOODSIDE 1	400
Hydro	CHI ENERGY, INC.	Water	WOODSIDE 2	740
Hydro	DUKE POWER CO.	Water	WYLIE	60,000.00
Total Number	**35**			
Total kW Capacity				**2,884,549.00**

Source: Energy Information Administration, *Renewable Plant Information System*.

Combustion Renewable Energy Users in South Carolina

The South Carolina Energy Office has also compiled a list of facilities in South Carolina that utilize renewable energy sources for steam and power generation as listed in Table 7.5. The fuel sources used are wood, wood waste, wood by-products, used tires, and used motor oil. This combustion process is the most common means of converting these waste materials to a renewable source of energy. It is also commercially available and can be integrated with existing infrastructure. Of the facilities reporting use of renewable fuels, fifty-five used wood, wood waste, and wood by-products, three facilities used recycled motor oil, and one facility used recycled tires as its renewable source of energy.

Table 7.4

Combustion Renewable Energy Users in South Carolina, 2004

Plant Name, City, County	Renewable Fuel Used: Wood Types	Volume per year (tons)	Size of Boiler (if applicable)	Electricity Produced (if applicable)
1. Black River Hardwood Co. Inc., Kingstree, SC Williamsburg Co.	Sawdust Wood Waste Sawdust	1,500 1,500	8.08 MMBtuh 8.08 MMBtuh	
2. Bowater Inc., Catawba, SC York Co.	Bark, Sawdust, Ground Pallets, Residential Wood Waste	475,000	Boiler #1 700 MMBtuh Boiler #2 385 MMBtuh	64, MW 499,300 MWh/yr
3. Carolina Furniture Works Inc., Sumter, SC Sumter Co.	Wood Waste	996	15 MMBtuh	
4. Cameron Lumber Co., Cameron, SC Calhoun Co.	Wood Waste		16 MMBtuh	
5. Carr Storage	Wood Waste		10.47 MMBtuh	
6. Carter Manufacturing Co., Lake City, SC Florence Co.	Wood Waste Bark, Shavings, Veneer Waste	2,190	7.2 MMBtuh	
7. Coastal Lumber, Walterboro, SC Colleton Co.	Wood Waste, Green Sawdust and Dry Shavings	24,513	61.2 MMBtuh	
8. Cody Mfg. Co. Inc., Orangeburg, SC Orangeburg Co.	Treated sawdust Wood chips	6		

Plant Name, City, County	Renewable Fuel Used: Wood Types	Volume per year (tons)	Size of Boiler (if applicable)	Electricity Produced (if applicable)
9. Cogen South L.L.C. @ Mead Westvaco, Charleston, SC Charleston Co.	Bark WTP Sludge	172,277 41,701	1,337 MMBtuh	
10. Collum Lumber Products, LLC Allendale, SC Allendale Co.	Sawdust Shavings	19,610 14,942	33.5 MMBtuh 27 MMBtuh	
11. Council Energy Co., Orangeburg, SC Orangeburg Co.	Wood Waste		Boiler #1 39 MMBtuh Boiler #2 39 MMBtuh	
12. Council Lumber Co., Orangeburg, SC Orangeburg Co.	Wood Waste		Boiler #1 4.93 MMBtuh Boiler #2 5.91 MMBtuh	
13. Elliott Sawmilling Co. Inc., Estill, SC Hampton Co.	Sawdust	74,439		671,182 MW
14. Georgia Pacific Corp., Prosperity Plywood Prosperity, SC Newberry Co.	Bark Sanders dust Ply trim Woodchips	112,451	200 MMBtuh	
15. Georgia Pacific, Holly Hill, SC Orangeburg Co.	Southern Pine – Wood waste- Bark and Sander Dust	45,070	333.6 MMBtuh	
16. Georgia Pacific: Russellville Particleboard, St. Stephens, SC Berkeley Co.	Wood Waste		Boiler #1 30.8 MMBtuh Boiler #2 30.8 MMBtuh Boiler #3 249 MMBtuh	
17. Hutto Lumber, Leesville, SC Lexington Co.	Wood Waste Sawdust	2,600	8 MMBtuh	

Plant Name, City, County	Renewable Fuel Used: Wood Types	Volume per year (tons)	Size of Boiler (if applicable)	Electricity Produced (if applicable)
18. Ingram Lumber Co., Leesville, SC Lexington Co.	Wood Waste Sawdust and Shavings	7,210.60	Kiln 2 19.76 MMBtuh	
	Wood Waste Sawdust and Shavings	16,446	Kiln 3 26.0 MMBtuh	
	Wood Waste Sawdust and Shavings	5,475	Kiln 4 15.0 MMBtuh	
	Wood Waste Sawdust and Shavings	192.4	Kiln 5 (New) MMBtuh	
19. International Paper Eastover Mill, Eastover,SC Richland Co.	Bark and Wood Waste	320,000	500 MMBtuh	
20. IP: Johnston Lumber Mill, Johnston, SC Saluda Co.	Dried wood shavings	17,912	28.7 MMBtuh	
21. IP: Newberry, Newberry, SC Newberry Co.	Wood Waste	18,971.30	Boiler #1 28.7 MMBtuh	
	Wood Waste	18,971.30	Boiler #2 28.7 MMBtuh	
	Wood Waste	18,971.30	Boiler #3 28.7 MMBtuh	
22. IP: Sampit, Georgetown, SC Georgetown Co.	Wood Waste Bark and Chips, in house.	70,000	63.7 MMBtuh	
23. Kearse Mfg. Company Inc., Olar, SC Bamberg Co.	Hardwood Chips Bark, Sawdust	4,000 2,000	25 MMBtuh	
24. Kiser, VP Lumber, Bowman, SC Orangeburg Co.	Wood waste, green saw dust, dry shavings	6,8000	19.13 MMBtuh	

Plant Name, City, County	Renewable Fuel Used: Wood Types	Volume per year (tons)	Size of Boiler (if applicable)	Electricity Produced (if applicable)
25. Koppers Inc., Florence, SC Florence Co.	Pine, Mixed & Oak	18,000	29,145 MMBtuh	

Plant Name, City, County	Renewable Fuel Used: Wood Types	Volume per year (tons)	Size of Boiler (if applicable)	Electricity Produced (if applicable)
26. Korn Industries Sumter Cabinet, Sumter, SC Sumter Co.	Wood waste		7.725 MMBtuh	
27. Marsh Lumber Co., Pamplico, SC Florence Co.	Wood waste Wood waste		Boiler #1 6.7 MMBtuh Boiler #2 5.6 MMBtuh	
28. M.L. Corley & Sons Sawmill, Inc., Lexington, SC Lexington Co.	Southern Yellow Pine Sawdust	10,000	13.39 MMBtuh	
29. Mead Westvaco South Carolina LLC, Charleston, SC Charleston Co.	Bark Sawdust	170,000 71,000	118 MMBtuh	85 MW
30. Mead Westvaco Summerville Lumber Mill, Charleston, SC Charleston Co.	Dry Wood Shavings	16,640	3@ 15 MMBtu 1@ 24 MMBtu	
31. New South Camden Plant, Camden, SC Kershaw Co.	Wood waste 60% bark and wet sawdust 40%	55,000	92 MMBtuh	
32. New South Conway Plant, Conway, SC Horry Co.	Wood waste, bark and sawdust	67,000	92 MMBtuh	
33. Norbord South Carolina Inc. Kinards, SC Kershaw Co.	Pine Bark,	162,500	298 MMBtuh	
34. Pilliod Furniture,	Wood waste –			

Plant Name, City, County	Renewable Fuel Used: Wood Types	Volume per year (tons)	Size of Boiler (if applicable)	Electricity Produced (if applicable)
Nichols, SC Marion Co.	(combination of particle board and MDF – material dense fiberboard)	988	16.8 MMBtuh	
35. Smurfit Stone Container, Florence, SC Florence Co.	Bark Sawdust	570,000		73 MW

Plant Name, City, County	Renewable Fuel Used: Wood Types	Volume per year (tons)	Size of Boiler (if applicable)	Electricity Produced (if applicable)
36. Smurfit Stone Container Corp. Latta, SC Dillon Co		11,325		
37. Sonoco-Hartsville, Hartsville, SC Darlington Co.	88.5% Bark and 11.5% sawdust (6.6 BTU/ton) and multiple waste products	31,000	Boiler #9 178 MMBtuh	Some
38. GTP Greenville, Inc., Greenville, SC Greenville, Co.	Poplar Wood Waste, #2 Fuel Oil	900	12.5 MMBtuh	
39. Talley-Corbett Box, Springfield, SC Orangeburg Co.	Wood waste		14.1 MMBtuh	
40. Tucker, CM Lumber, Pageland, SC Chesterfield Co.	Wood waste		15 MMBtuh	
41. Trigen Bio Powers, Greenwood, SC Greenwood Co.	Chips Sawdust	200	270 MMBtuh	
42. United Wood Treating Co. Inc., Whitmire, SC Newberry Co.	Pine Bark & Dust	2,000	11.7 MMBtuh	
43. Vaughn Bassett Furniture, Sumter, SC	Wood waste	2,130	25 MMBtuh	

Plant Name, City, County	Renewable Fuel Used: Wood Types	Volume per year (tons)	Size of Boiler (if applicable)	Electricity Produced (if applicable)
Sumter Co.				
44. Walterboro Veneer Co., Walterboro, SC Colleton Co.	Wood waste	27,934	28.71 MMBtuh 21.6 MMBtuh	
45. Warren & Griffin Co., Williams, SC Colleton Co.	Wood waste		15.5 MMBtuh	
46. Weyerhaeuser: Chester Paper Mill, Fort Mill, SC York Co.	Wood waste bark and sludge	115,500	210 MMBtuh	
47. Weyerhaeuser: Marlboro Paper Mill, Tatum, SC Marlboro Co.	Wood waste bark and sludge	93,214	470 MMBtuh	
48. Withers Industries, Summerville, SC Dorchester Co.	Wood waste and coal		14 MMBtuh	

Plant Name, City, County	Renewable Fuel Used: Wood Types	Volume per year (tons)	Size of Boiler (if applicable)	Electricity Produced (if applicable)
49. MeadWestvaco, North Charleston, SC Charleston Co.	Bark, waste treatment sludge	300,000		85 MW average, 98 MW 600,000 MWH/year
50. Kauffman Truss Inc. Westminister, SC Oconee Co.	Southern Yellow Pine	20		
51. King Lumber Inc., Liberty, SC Pickens Co.	Sawdust Mulch	5000		
52. John R. Frazier, Inc. Timber & Land, Newberry, SC Newberry Co.		2,000		
53. Edisto Wood Preserving Co., Olar, SC Bamberg Co.	Pine	4,000		
54. Kinard Wood Preserving Erhardt, SC Bamberg Co.	Wood shavings from peeled posts & poles	4,500		

Plant Name, City, County	Renewable Fuel Used: Wood Types	Volume per year (tons)	Size of Boiler (if applicable)	Electricity Produced (if applicable)
Plant Name, City, County	**Renewable Fuel Used: Used Motor Oil & Used Tires**	**Volume per year**	**Size of Boiler (if applicable)**	**Electricity Produced (if applicable)**
1. Carolina Pole, Eutawville, SC Orangeburg Co.	Used motor oil	260,000 gallons	25 MMBtuh	
2. International Paper Eastover Mill, Eastover,SC Richland Co.	Used Oil	2,000,000 gallons	Multiple Boilers	
3. Santee Cooper GOFER Program, Moncks Corner, SC Berkeley Co.	Used Oil	2,124,107 gallons		22,762 MWh
4. International Paper Eastover Mill, Eastover, SC Richland Co.	Tire-Derived Fuel	20,000 tons		

Source: South Carolina Energy Office.

Landfills in South Carolina and their Capacity for Renewable Energy

Landfill gas is the natural by-product of the decomposition of solid waste in landfills and is comprised primarily of carbon dioxide and methane. By preventing emissions of methane (a powerful greenhouse gas) through the development of landfill gas energy projects, the Landfill Methane Outreach Program (LMOP), initiated in this state by the South Carolina Energy Office and the U.S. Environmental Protection Agency, helps businesses, states, energy providers, and communities protect the environment and build a sustainable future.

Municipal solid waste landfills are the largest source of human-related methane emissions in the United States, accounting for about 34 percent of these emissions. At the same time, methane emissions from landfills represent a lost opportunity to capture and use a significant energy source. Landfill gas (LFG) is created as solid waste decomposes in a landfill. This gas consists of about 50 percent methane (CH_4), the primary component of natural gas, about 50 percent carbon dioxide (CO_2), and a small amount of non-methane organic compounds.

Instead of allowing LFG to escape into the air, it can be captured, converted, and used as an energy source. Using LFG helps to reduce odors and other hazards associated with LFG

emissions, and it helps prevent methane from migrating into the atmosphere and contributing to local smog and global climate change.

Landfill gas is extracted from landfills using a series of wells and a blower/flare (or vacuum) system. This system directs the collected gas to a central point where it can be processed and treated depending upon the ultimate use for the gas. From this point, the gas can be simply flared or used to generate electricity, replace fossil fuels in industrial and manufacturing operations, fuel greenhouse operations, or be upgraded to pipeline-quality gas.

A LFG project will capture roughly 60-90 percent of the methane emitted from the landfill, depending on system design and effectiveness. The captured methane is destroyed (converted to water and the much less potent CO_2) when the gas is burned to produce electricity. The greenhouse gas reduction benefits of a typical 4 megawatt LFG project equate to planting over 60,000 acres of forest per year or removing the annual carbon dioxide emissions from over 45,000 cars. This amount of energy would also offset the use of 1,000 railcars of coal or displace the fossil fuel equivalent of almost 500,000 barrels of oil. Producing energy from LFG avoids the need to use non-renewable resources such as coal, oil, or natural gas to produce the same amount of energy. This can reduce gas end-user and power plant emissions of CO_2 and criteria pollutants such as sulfur dioxide (which is a major contributor to acid rain), particulate matter (a respiratory health concern), nitrogen oxides (NO_x), and trace hazardous air pollutants.

Table 7.5 consists of landfill sites that are currently operational, under construction, candidates or have future potential for converting waste to renewable energy producing facilities.

Table 7.5

Actual and Potential Landfill Gas Facilities Operating in South Carolina

Landfill Name	City	County	Waste In Place (tons)	Landfill Owner Organization	Project Status	Project Start Date	LFGE Project Type	MW Capacity	Emission Reductions ($MMTCO_2E$)
Horry County LF	Conway	Horry	3,037,000	Horry County Solid Waste Authority, Inc.	Operational	9/04/01	Reciprocating Engine	3.3	0.127
Palmetto Landfill	Wellford	Spartanburg	2,700,000	WMI	Operational	3/01/03	Cogeneration	5.6	0.310
Lee County LF, LLC	Bishopville	Lee	7,133,000	Lee County LF, LLC	Operational	2/28/05	Reciprocating Engine	5.4	0.228
Anderson Regional Landfill	Belton	Anderson	2,533,000	Allied Waste Industries	Under Construction	11/01/05	Turbine	5.5	0.310
Screaming Eagle	Columbia	Richland	15,250,000	Waste Management Industries	Under Construction	10/01/05	Turbine	5.5	0.310
Bees Ferry Road LF	Johns Island	Charleston	2,300,000	Charleston County	Candidate				

Berkeley County LF	Moncks Corner	Berkeley	1,215,200	Berkeley County Water and Sanitation Authority	Candidate				
Berkeley County Subtitle D LF	Moncks Corner	Berkeley	467,700	Berkeley County Water and Sanitation Authority	Candidate				
Camp Croft LF	Spartanburg	Spartanburg	1,100,000	County of Spartanburg	Candidate				
Cherokee County Landfill	Gaffney	Cherokee	2,400,000	Cherokee County	Candidate				
Enoree LF	Greer	Greenville	NA	Greenville County	Candidate				
Enoree LF, Phase II	Greer	Greenville	2,800,000	Greenville County	Candidate				
Georgetown County Landfill	Georgetown	Georgetown	971,000	Georgetown County Public Works Dept.	Candidate				
Greenwood County Subtitle D LF	Greenwood	Greenwood	710,899	Greenwood County Public Works	Candidate				
Greenwood Landfill	Greenwood	Greenwood	752,734	Greenwood County Public Works	Candidate				
Hickory Hill MSWLF	Ridgeland	Jasper	2,867,263	Waste Management, Inc.	Candidate				
Kershaw County	Camden	Kershaw	1,048,021	Kershaw County	Candidate				
Northeast Sanitary Landfill	Eastover	Richland	1,987,890	Allied Waste Industries	Candidate				
Oakridge Landfill Inc.	Dorchester	Dorchester	3,183,595	WMI	Candidate				
Orangeburg County Landfill	Orangeburg	Orangeburg	1,093,022	Orangeburg County	Candidate				
Pendleton Sanitary Landfill	Pendleton	Anderson	600,000	Anderson County	Candidate				
Seneca MSWLF	Seneca	Oconee	749,266	Oconee County	Candidate				

Landfill Name	City	County	Waste In Place (tons)	Landfill Owner Organization	Project Status	Project Start Date	LFGE Project Type	MW Capacity	Emission Reductions ($MMTCO_2E$)
Starr Sanitary Landfill	Starr	Anderson	1,120,000	Anderson County	Candidate				
Three Rivers Regional Subtitle D MSWLF	Jackson	Aiken	900,000	Three Rivers Solid Waste Authority	Candidate				
Wellford LF	Spartanburg	Spartanburg	1,824,500	County of Spartanburg	Candidate				
York County LF	York	York	2,955,847	York County	Candidate				
Abbeville County Sanitary LF	Abbeville	Abbeville		Abbeville County	Potential				
Abbeville County Subtitle D MSWLF	Abbeville	Abbeville		Abbeville County	Potential				
Aiken County Landfill	Langley	Aiken	1,273,000	Aiken County	Potential				
Aiken County Landfill #3 Wagener Site	Aiken	Aiken		Aiken County	Potential				

Allendale County	Allendale	Allendale		WasteMasters of South Carolina, Inc.	Potential				
Bamberg County	Bamberg	Bamberg		Bamberg County	Potential				
Barnwell County	Barnwell	Barnwell		Barnwell County	Potential				
Big Creek MSW Landfill	Belton	Anderson	1,802,000	Anderson County	Potential				
Chester County	Chester	Chester	615,600	Chester County	Potential				
Clarendon County MSWLF	Manning	Clarendon		Clarendon County	Potential				
Easley MSWLF	Pickens	Pickens		Pickens County	Potential				
Florence County LF	Florence	Florence	1,114,000	Florence County	Potential				
Fort Jackson Sanitary LF	Fort Jackson	Richland		Richland County	Potential				
Laurens County Sanitary LF	Laurens	Laurens		Laurens County Public Works Department	Potential				
Lexington County Edmund Facility	Lexington	Lexington	500,000	Lexington County	Potential				
Pepperhill C&D Industrial Landfill	North Charleston	Dorchester		Republic Services, Inc.	Potential				
Richland County Landfill	Columbia	Richland	1,626,000	Richland County	Potential				
Sandy Pines Landfill		Dorchester	310,908	Waste Management of SC, Inc.	Potential				
Sumter County MSW LF	Sumter	Sumter	786,000	Sumter County	Potential				
Union County	Union	Union	530,000	Union County	Potential				
Westinghouse Savannah River Co. LF	Aiken	Aiken		Westinghouse Savannah River Co.	Potential				
Williamsburg County MSWLF	Kingstree	Williamsburg		Williamsburg County	Potential				

Source: Environmental Protection Agency.

Alternative-Fueled Vehicles in Use

From 1998 to 2003, the number of alternative-fueled vehicles (AFVs) in use in South Carolina increased by 102.3%. This rate of growth is significantly higher than the surrounding states of North Carolina (15.2%), Georgia (55.7%), Tennessee (-17.8%), and Florida (63.9%). Overall, the number of AFVs in use in the U.S. rose by 33.1%. South Carolina has initiated several programs to increase the use of AFVs, particularly by taking a leading role in the Palmetto State Clean Fuels Coalition. This program consists of volunteer coalitions that develop public/private partnerships to promote alternative fuels and vehicles, fuel blends, fuel economy, hybrid vehicles, and idle reduction.

Table 7.6

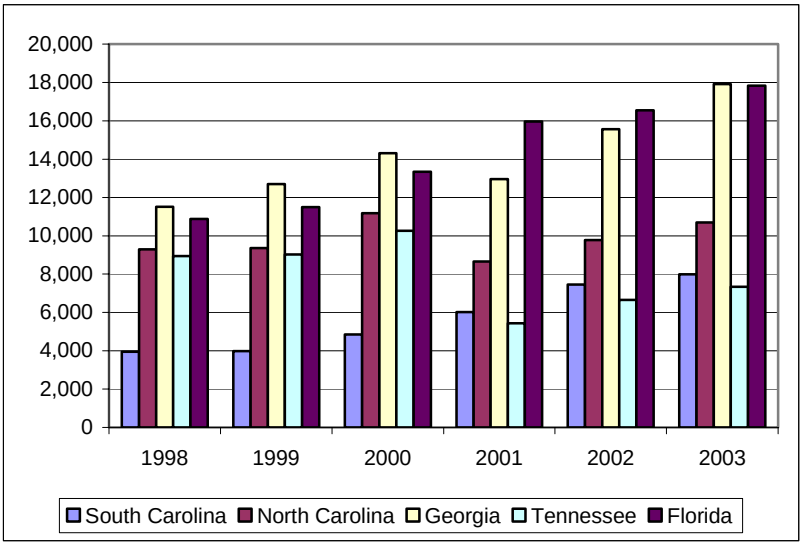
Estimated Number of Alternative-Fueled Vehicles in Use, Selected States Comparison, 1998-2003

Year	South Carolina	North Carolina	Georgia	Tennessee	Florida	U.S.
1998	3,951	9,285	11,504	8,937	10,877	383,847
1999	3,993	9,358	12,702	9,016	11,485	407,542
2000	4,847	11,171	14,309	10,262	13,351	455,906
2001	6,018	8,661	12,959	5,430	15,959	425,457
2002	7,460	9,770	15,567	6,654	16,542	471,098
2003	7,992	10,695	17,912	7,343	17,829	510,805

Source: Energy Information Administration, *Alternatives to Traditional Transportation Fuels*.

Figure 7.2

Estimated Number of Alternative-Fueled Vehicles in Use, Selected States, 1998-2003



Source: Energy Information Administration, *Alternatives to Traditional Transportation Fuels*.

Alternative-Fueled Vehicles Categorized by Fuel Type

The reporting of alternative fuel use in South Carolina by the U.S. Department of Energy has not been consistent over the past few years. Thus, providing an accurate historical use pattern of each fuel is not possible at this time. However, available data indicates there has been a very significant increase in the use of ethanol in the state. In 2002, 54% of the AFVs used ethanol, 41% used liquefied petroleum gas (LPG), and 5% used natural gas.

Table 7.7

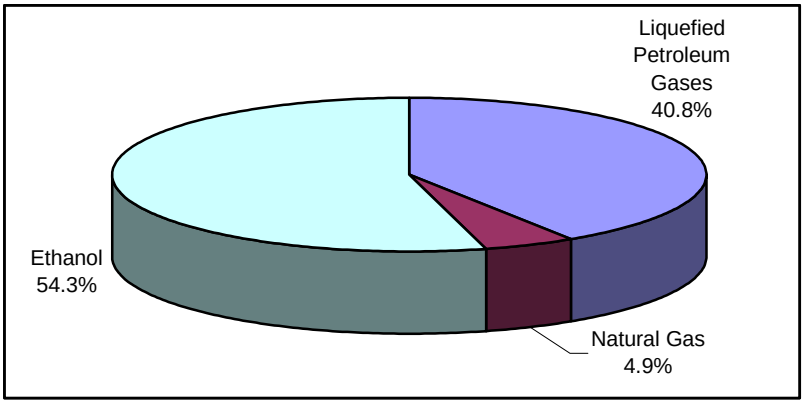
Estimated Number of Alternative-Fueled Vehicles in Use and Fuel Type in South Carolina, 1996-2002

Year	Liquefied Petroleum Gases (Propane)	Compressed Natural Gas	Methanol	Ethanol	Electricity	TOTAL	Percent Change
1996	4,293	93	0	1	18	4,405	N/A
1997	3,663	141	0	6	21	3,831	-13.0%
1998	3,686	113	2	125	25	3,951	3.1%
1999	3,700	129	17	258	25	4,129	4.5%
2000	3,771	146	0	907	23	4,847	17.4%
2001*	N/A	N/A	N/A	N/A	N/A	6,018	24.2%
2002	3,047	362	0	4,051	0	7,460	24.0%

*The breakdown of vehicles by alternative fuel type was not available from the EIA for the 2001 year.
Source: Energy Information Administration, *Alternatives to Traditional Transportation Fuels*.

Figure 7.3

Estimated Number of Alternative-Fueled Vehicles in Use by Fuel Type in South Carolina, 2002



Source: Energy Information Administration, *Alternatives to Traditional Transportation Fuels*.

Alternative Fuel Use in South Carolina by Category

South Carolina is making strides in using alternative transportation fuels. Using consumption data compiled from various sources, the South Carolina Energy Office has developed a database to track B20 biodiesel fuel (80% diesel, 20% biofuel) and E-85 fuel (85% ethanol and 15% gasoline). As Figure 7.4 indicates, state government (53%) is the largest consumer of B20 fuel in South Carolina, mostly by the State Fleet Management. The federal government (29%) is the next largest consumer of biodiesel fuel, with the Department of Defense as the major consumer. With an increase of 60% in biodiesel fuel consumption from 2001 to 2004, this particular alternative transportation fuel shows great promise for the future. The federal government is the largest consumer of E-85 fuel, accounting for 77% in 2004 with South Carolina state government accounting for 11% of the total E-85 fuel consumption in 2004.

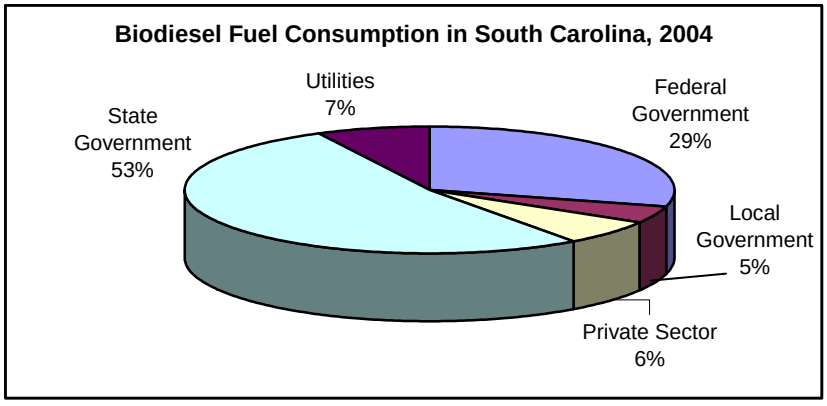
Table 7.8

B20 Biodiesel Fuel Consumption in South Carolina, 2001-2004
(Gallons)

Category	2001	2002	2003	2004
Federal Government	382,500	173,900	259,725	185,530
Local Government	0	9,810	89,401	29,240
Private Sector	15,410	55,750	38,861	40,511
State Government	3,315	500	76,114	336,189
Utilities	0	61,485	79,750	47,050
Total	**401,225**	**301,445**	**543,851**	**638,520**

Source: South Carolina Energy Office, Alternative Fuels Database.

Figure 7.4



Source: South Carolina Energy Office, Alternative Fuels Database.

Table 7.9

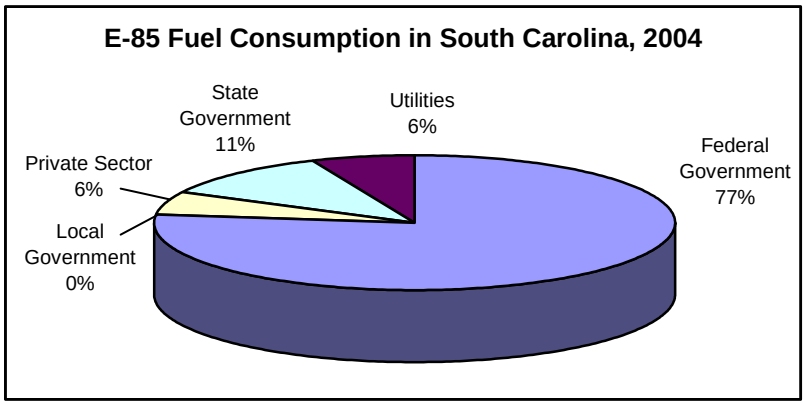
E-85 Fuel Consumption in South Carolina, 2001-2004
(Gallons)

Category	2001	2002	2003	2004
Federal Government	151,000	185,540	265,100	238,165
Local Government	0	152	0	0

Private Sector	766	4,525	8,399	17,476
State Government	0	26,160	18,311	34,280
Utilities	0	7,638	25,455	20,150
Total	**151,766**	**224,015**	**317,265**	**310,071**

Source: South Carolina Energy Office, Alternative Fuels Database.

Figure 7.5



Source: South Carolina Energy Office, Alternative Fuels Database.

A1: Appendix A : Glossary

Anthracite: The highest rank of coal; used primarily for residential and commercial space heating. It is hard, brittle, and black lustrous coal, often referred to as hard coal, containing a high percentage of fixed carbon and a low percentage of volatile matter. The moisture content of fresh-mined anthracite is generally less than 15 percent. The heat content of anthracite ranges from 22 to 28 million Btu per ton on a moist, mineral-matter-free basis.

Average Revenue per Kilowatthour: The average revenue per kilowatthour of electricity sold by sector (residential, commercial, industrial, or other) and geographic area (State, Census, division, and national) is calculated by dividing the total monthly revenue by the corresponding total monthly sales for each sector and geographic area.

Barrel (bbl): A volumetric unit of measure for crude oil and petroleum products equivalent to 42 U.S. gallons.

Biomass (Biofuels): Energy sources from recent-term organic (plant and animal) matter. Nonfossil biomass energy sources are essentially unprocessed; they are burned or gassified, as received, to produce thermal energy or electricity. Examples are fuelwood, waste wood, garbage, and crop waste.

Bituminous Coal: A dense coal, usually black, sometimes dark brown, often with well-defined bands of bright and dull material, used primarily as fuel in steam-electric power generation, with substantial quantities also used for heat and power applications in manufacturing and to make coke. Bituminous coal is the most abundant coal in active U.S. mining regions. Its moisture content is usually less than 20 percent. The heat content of bituminous coal ranges from 21 to 30 million Btu per ton on a moist, mineral-matter-free basis.

British Thermal Unit (Btu): A standard unit for measuring the quantity of heat energy equal to the quantity of heat required to raise the temperature of 1 pound of water by 1 degree Fahrenheit. Because different energy types use different standards of measurement, they are often converted into Btu to enable comparison. One Btu is equal to 252 calories of heat.

Capability: The maximum load that a generating unit, generating station, or other electrical apparatus can carry under specified conditions for a given period of time without exceeding approved limits of temperature and stress.

Coal: A black or brownish-black solid combustible substance formed by the partial decomposition of vegetable matter without access to air. The rank of coal, which includes anthracite, bituminous coal, sub-bituminous coal, and lignite, is based on fixed carbon, volatile matter, and heating value.

Commercial Sector: The commercial sector is generally defined as non-manufacturing business establishments, including hotels, motels, restaurants, churches, wholesale businesses, retail stores, and health, social, and educational institutions.

Cooperative Electric Utility: An electric utility legally established to be owned by and operated for the benefit of those using its service. The utility company will generate, transmit, and/or distribute supplies of electric energy to a specified area not being serviced by another utility. Such ventures are generally exempt from Federal income tax laws. Most electric cooperatives have been initially financed by the Rural Electrification Administration, U.S. Department of Agriculture.

Demand-side-Management (DSM): Refers to the use of cost-effective conservation, efficiency, and load management in order to reduce the demand for and cost of energy services. DSM is a resource

option that complements power supply. It not only saves the customer money, but also helps a utility achieve less pollution and avoid more costly supply-side investments.

Distillate Fuel Oil: Usually refers to "home heating oil." Included are Fuel Oils No. 1, No. 2, and No. 4; and Diesel Fuels No. 1, No. 2, and No. 4. These products are used primarily for space heating, on-and-off highway diesel engine fuel (including railroad engine fuel and fuel for agriculture machinery), and electric power generation.

Electric Utility: A corporation, person, agency, authority, or other legal entity that owns and/or operates facilities within the U.S. for the generation, transmission, distribution, or sale of electric energy for use by both the public and private sectors.

Energy: The capacity for doing work as measured by the capability of doing work (potential energy) or the conversion of this capability to motion (kinetic energy). Energy has several forms, some of which are easily convertible and can be changed to another form useful for work. Most of the world's convertible energy comes from fossil fuels that are burned to produce heat that is then used as a transfer medium to mechanical or other means in order to accomplish tasks. Electrical energy is usually measured in kilowatthours, while heat energy is usually measured in Btus.

End-Use: Any ultimate consumption of any type of fossil fuel (petroleum, coal, natural gas) or electricity whether generated by fossil fuel or other energy sources. End-users are often classified by economic sector, such as residential, commercial, industrial, and transportation.

Facility: An existing or planned location or site at which prime movers, electric generators, and/or equipment for converting mechanical, chemical, and/or nuclear energy into electric energy are situated, or will be situated. A facility may contain more than one generator of either the same or different prime mover type.

Fossil Fuel: Any naturally occurring organic fuel, such as petroleum, coal, and natural gas, which are derived from the remains of ancient plants and animals. Fossil fuels are sometimes referred to as conventional fuels or conventional energy sources (as compared with renewable energy sources: solar power, biomass, wind energy, etc.) because the bulk of today's energy generation is derived from them and most of the industrial economy is based upon them.

Gallon: A unit of volume. A U.S. gallon contains 3.785 liters and it is 0.83 times the imperial gallon. One U.S. gallon of water weighs 8.3 pounds.

Gas Turbine Plant: A plant in which the prime mover is a gas turbine. It typically consists of an axial-flow air compressor and one or more combustion chambers, where liquid or gaseous fuel is burned and the hot gases are passed to the turbine and where the hot gases expand to drive the generator and are then used to run the compressor.

Generating Unit: Any combination of physically connected generator(s), reactor(s), boiler(s), combustion turbine(s), or other prime mover(s) operated together to produce electric power.

Hydroelectric Plant (Hydro): A plant in which the turbine generators are driven by falling water.

Industrial Sector: The industrial sector is that section of the economy generally defined as manufacturing, construction, mining, agriculture, fishing, and forestry establishments.

Interruptible Gas: Gas sold to customers with a provision that permits curtailment or cessation of service at the discretion of the distributing company under certain circumstances, as specified in the service contract.

Investor-Owned Utility: A class of utility whose stock is publicly traded and which is organized as a taxpaying business, usually financed by the sale of securities in the capital market. It is regulated and authorized to achieve an allowed rate of return.

Jet Fuel: Includes both naphtha-type and kerosene-type jet fuel meeting standards for use in aircraft turbine engines. Some jet fuel is used for generating electricity in gas turbines.

Kerosene: A petroleum middle distillate having burning properties suitable for use as an illuminant when burned in wick lamps. Kerosene is also used in space heaters, cooking stoves, and water heaters.

Kilowatt (kW): One thousand watts.

Kilowatthour (kWh): One thousand watt hours. The amount of electrical energy involved with a 1-kilowatt demand over a period of one hour. One kilowatthour is equivalent to 3,412 Btu of heat energy.

Liquified Gases (LPG): Propane, propylene, butane, and propane-butane mixtures produced at a refinery or natural gas processing plant, including plants that fractionate raw natural gas processing plant liquids. These are derived by refining and processing natural gas, crude oil or unfinished oil.

Load (Electric): The amount of electricity delivered or required at any specific point or points on a system. The requirement originates at the energy-consuming equipment of the consumers.

Mcf: One thousand cubic feet.

Megawatt: 1,000 kilowatts; 1 million watts.

Motor Gasoline: A complex mixture of relatively volatile hydrocarbons, with or without small quantities of additives, that have been blended to form a fuel suitable for use in spark ignition engines. Included are leaded and unleaded products and refinery products.

Natural Gas: A naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in porous geological formations beneath the earth's surface, often in association with petroleum. The principal constituent is methane, and is generally much higher in heat content than manufactured gas.

Net Generation: Gross generation minus plant use from all electric utility owned plants. The energy required for pumping at a pumped-storage plant is regarded as plant use and must be deducted from the gross generation.

No. 1 Diesel Fuel: A light distillate having ignition properties suitable for use in compression ignition engines. City buses use this product extensively.

No. 1 Fuel Oil: A distillate fuel oil intended for use in vaporizing pot-type burners.

No. 2 Diesel Fuel: A heavier distillate for use in compression ignition engines less sensitive than those requiring No. 1 Diesel Fuel. Highway transport trucks are large consumers of this product.

No. 2 Fuel Oil: A distillate fuel oil for general purpose domestic heating in burners not requiring No. 1 fuel oil.

No. 4 Fuel Oil: An oil for commercial burner installations with preheating facilities. It is used extensively in industrial plants. This grade is a blend of distillate fuel oil and residual fuel oil stocks.

No. 5 and No. 6 Fuel Oil: See residual fuel.

Nuclear Fuel: Fissionable materials that have been enriched to such a composition that, when placed in a nuclear reactor, will support a self-sustaining fission chain reaction, producing heat in a controlled manner for process use. Also listed as uranium.

Peak Demand: The maximum electric load during a specified period of time.

Petroleum: A mixture of hydrocarbons existing in the liquid state found in natural underground reservoirs, which includes fuel oil products, crude oil, kerosene, and jet fuel.

Primary Energy: Energy in its naturally occurring form (coal, oil, uranium, etc.) before conversion to end-use forms. The term is used in this report to indicate energy consumed by the major sectors (especially electric utilities) without regard to energy consumed by end-users.

Propane: Also known as liquefied petroleum gas (LPG). A colorless, highly volatile hydrocarbon that is readily recovered as a liquefied gas at natural gas processing plants and refineries. It is used primarily for residential and commercial heating and cooling, and also a fuel for transportation and industrial uses. Propane is the first product refined from crude petroleum.

Qualifying Facility: A cogeneration or small power production facility that meets certain ownership, operating, and efficiency criteria established by the Federal Energy Regulatory Commission (FERC) pursuant to the Public Utility Regulatory Policies Act (PURPA).

Refined Petroleum: Products obtained from the processing of crude oil, unfinished oils, natural gas liquids and other miscellaneous hydrocarbon compounds. Includes aviation gasoline, motor gasoline, naphtha-type jet fuel, kerosene-type jet fuel, kerosene, distillate fuel oil, residual fuel oil, ethane, liquefied petroleum gases, petrochemical feedstocks, special naphtha, lubricants, paraffin wax, petroleum coke, asphalt, road oil, still gas, and miscellaneous products.

Renewable Resources: Naturally, but flow-limited resources that can be replenished. They are virtually inexhaustible in duration, but limited in the amount of energy that is available per unit of time. Some (such as geothermal and biomass) may be stock-limited in that stocks are depleted by use, but on a time scale of decades, or perhaps centuries, they can probably be replenished. Renewable energy resources include: biomass, hydro, geothermal, solar and wind.

Residential Sector: The residential sector is defined as private household establishments which consume energy primarily for space heating, water heating, air conditioning, lighting, refrigeration, cooking and clothes drying.

Residual Fuel: The heavier oils that remain after the distillate fuel oils and lighter hydrocarbons are boiled off in refinery operations. Included are products known as No. 5 and No. 6 fuel oil, heavy diesel oil, Navy Special Fuel Oil, Bunker C oil, and acid sludge and pitch used as refinery fuels. Residual fuel oil is used for production of electric power, space heating, vessel bunkering, and various industrial purposes.

Sales for Resale: Energy supplied to other electric utilities, cooperatives, municipalities, and federal and state electric agencies for resale to ultimate consumers.

Short Ton (coal): A unit of weight equal to 2,000 pounds used for calculating the volume of coal.

Steam-Electric Plant: A plant in which the prime mover is a steam turbine. The steam used to drive the turbine is produced in a boiler where fossil fuels are burned.

Watt: The unit of measure for electric power or rate of doing work. The rate of energy transfer equivalent to 1 ampere flowing under a pressure of 1 volt at unity power factor.

Watthour (Wh): An electrical energy unit of measure equal to 1 watt of power supplied to, or taken from, an electric circuit steadily for one hour.

B1: Appendix B: Conversion Factors

Average Fuel/Btu Equivalents:

1 Kilowatthour of Electricity	3,413 Btu
1 Cubic Foot of Natural Gas	1,008 to 1,034 Btu
1 Therm of Natural Gas	100,000 Btu
1 Gallon of Liquefied Petroleum Gas (LPG)	95,475 Btu
1 Barrel of Crude Oil	5,800,000 Btu
1 Gallon of Crude Oil	138,095 Btu
1 Gallon of Kerosene or Light Distillate Oil	135,000 Btu
1 Gallon of Middle Distillate or Diesel Fuel Oil	138,690 Btu
1 Gallon of Residual Fuel Oil	149,690 Btu
1 Gallon of Gasoline	125,000 Btu
1 Ton of Coal	16,200,000 to 26,000,000 Btu
1 Ton of Wood	9,000,000 to 17,000,000 Btu
1 Standard Cord of Wood	6,000,000 to 8,000,000 Btu

Measurement Equivalents:

1 Ton (short) = 2,000 pounds; 6.65 barrels (crude oil)
1 Metric Ton = 2,200 pounds
1 Barrel (bbl) = 42 gallons; 5.615 cubic feet; 159.0 liters
1 Mcf = 1,000 cubic feet
1 Therm = 100,000 Btu
1 Thousand Btu (Mbtu) = 1,000 Btu
1 Kilowatthour (kWh) = 1,000 watt-hours
1 Megawatthour (MWh) = 1,000 kWh or 1,000,000 watt-hours
1 Gallon = 4.524 pounds of liquefied petroleum gas
1 Standard Cord of Wood = 8 feet x 4 feet x 4 feet; 128 cubic feet; approx. 4,000 pounds

Visit our Website for more information about this publication!

If you would like more information on this *2005 South Carolina Energy Statistical Profile*, please contact the South Carolina Energy Office at:

Telephone: (803) 737-8030 and 1-800-851-8899
Fax: (803) 737-9846

Copies of this report, as well as updates, are available for downloading in PDF by visiting our website at:

www.energy.sc.gov

Also available on our website is an online form for any questions or comments regarding this publication. Follow the "Questions and Feedback" link.

Thank you for your interest in this South Carolina Energy Office publication.

2005 South Carolina Energy Statistical Profile

Published by the South Carolina Energy Office
Division of Insurance and Grants Services
State Budget and Control Board
1201 Main Street, Suite 430
Columbia, South Carolina 29201

Published: June 2005

STATE BUDGET AND CONTROL BOARD

Mark Sanford, Chairman
Governor

Grady L. Patterson, Jr.
State Treasurer

Richard Eckstrom
Comptroller General

Hugh K. Leatherman, Sr.
Chairman, Senate Finance Committee

Daniel T. Cooper
Chairman, House Ways and Means Committee

Frank W. Fusco
Executive Director

This report was prepared with the support of the U.S. Department of Energy (DOE), Grant No. DE-FG44-00R410766, State Energy Program, administered by the South Carolina Energy Office. However, any opinions, findings, conclusions, or recommendations expressed herein are those of the author(s) and do not necessarily reflect the views of the DOE.